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VOLUME TWO JANUARY, 1914 NUMBER ONE

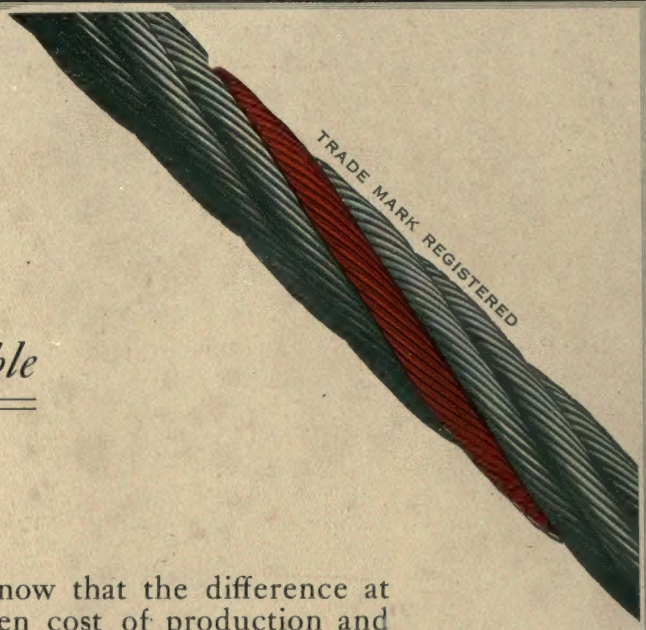
A MONTHLY MAGAZINE OF MEN, MACHINERY AND METHODS

STEAM MACHINERY

FOR THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER

HERCULES WIRE ROPE

Tough - Strong - Safe - Durable



You practical loggers know that the difference at the end of the year between cost of production and selling price is what counts, not what you pay for your equipment when bought.

While there are numerous reasons why HERCULES wire rope should handle your logs economically, proof is what you men want, so all we ask is that you give HERCULES rope a try-out on your own work, in order that it may have an opportunity to demonstrate its ability.

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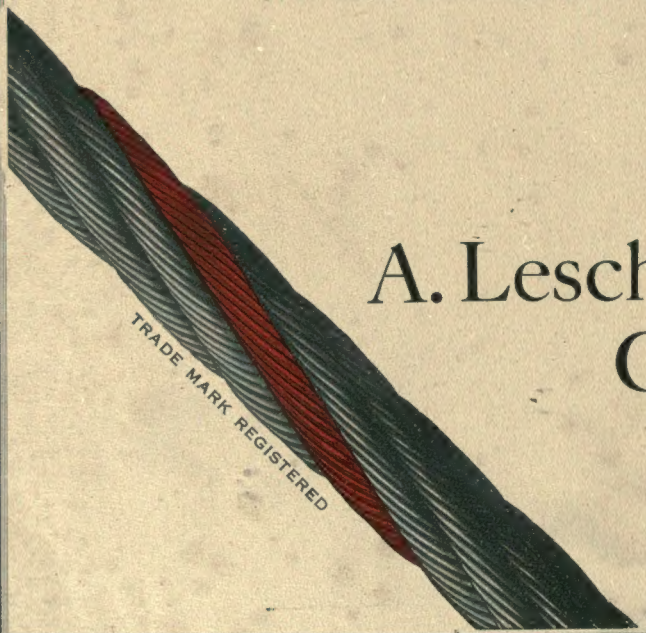
We would like for you to compare the "HERCULES service" with that received from any other wire rope ever used under the same conditions.



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Steam Machinery

Vol. 2. No. 1.

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A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

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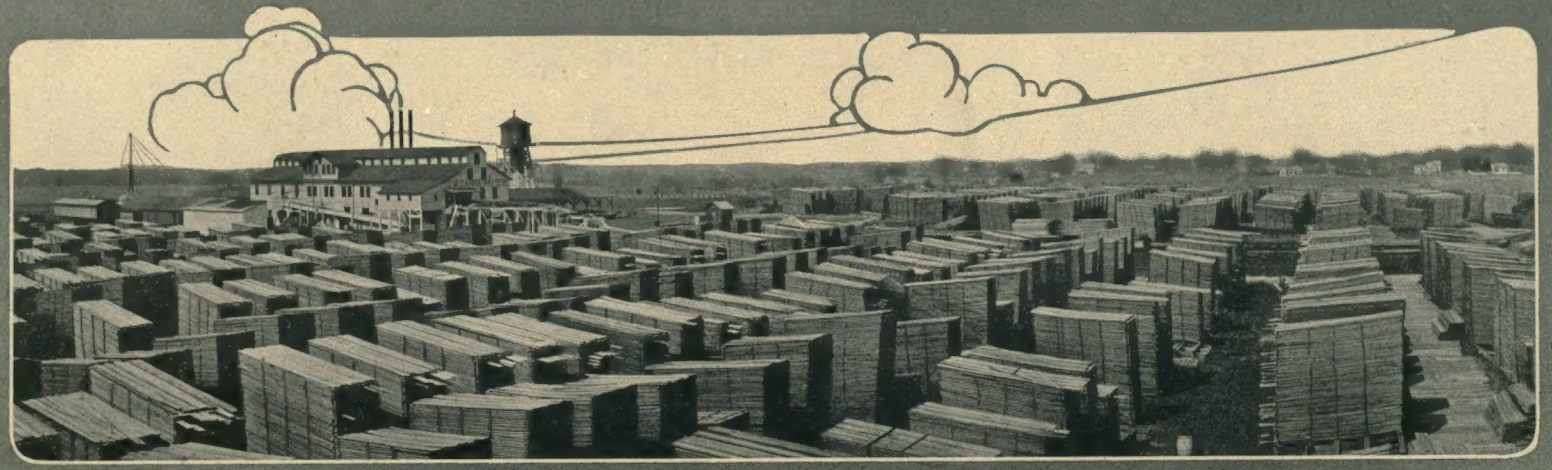
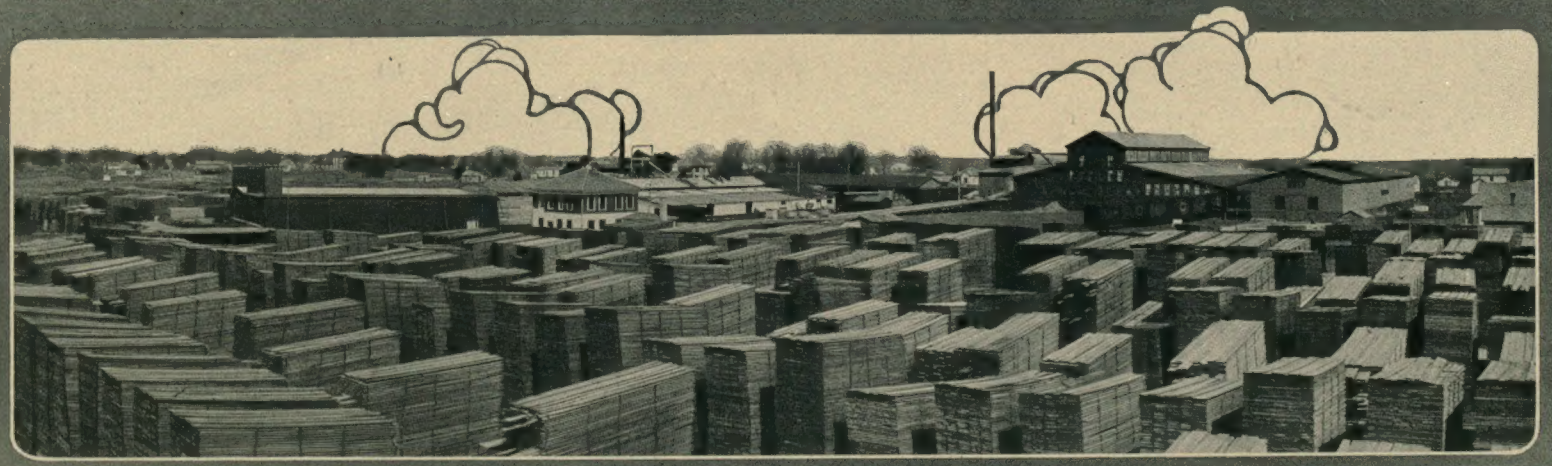


Panoramic View of Mills & Yards: C.M. Carrier Lumber & Mfg. Co.



Lower View attaches to right-hand of Top view to form complete panorama

PHOTOS REPRODUCED THROUGH THE COURTESY OF
AMERICAN LUMBERMAN

SEE "THE ONLY WAY TO HANDLE HARDWOOD" PAGE 7.

A Monthly Magazine of Men, Machinery & Methods

STEAM MACHINERY
DULUTH MINN.

Charles H. Mackintosh Managing Editor

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We absolutely and unconditionally guarantee never to publish in our columns advertising matter of a fraudulent or misleading nature, nor to accept copy from any firm whatsoever until we are satisfied beyond all possibility of reasonable doubt that such firm is in a position to live up to the letter of its proposals and has done so consistently in the past. This we do, not because we are better or more moral than other magazines of our day, but because we conceive the true purpose of a magazine to be service to its readers, and we would serve well in order that we may be well served.

STEAM MACHINERY PUBLISHING COMPANY

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WITH this first issue for nineteen fourteen we set a new standard of typographical and illustrative excellence for ourselves. Several hundreds of our friends have written in during the past year implying, thru their kindly and complimentary remarks, that it was generally conceded that our original standard in print, paper and pictures made any attempt to "go it one better" prohibitive. This year, however, with a bright and reckless "Ish ka bibble!" we have decided to lash last year's record to the mast and leave it there to starve. It now costs us three dollars a sub. to send out STEAM MACHINERY for a year, judging by last year's figures. Our subscription price is only one such dollar, but in our advertisers we trust. We want to give you the best and snappiest paper we are capable of producing, irrespective of cost or subscription price. We want you to *use* our paper, reading it and also writing to it whenever anything of especial interest comes up in your own work, and this we can insure in no other way than thru making it worthy of you. As a special New Year's Gift, we ask every one of our readers to drop *us* a postal card containing just one constructive suggestion for the coming year. Whenever we possibly can, we will recompense the senders by adopting their suggestions to the improvement of our mutual magazine. In *every* case we will return sincere thanks.

LISTEN!—The last stroke of midnight has just dodged the uplifted hoof of the first minute of 1914!

Nineteen-thirteen is dead! On with the good resolutions, let Joy be unrefined!

Resolved: that we will never drink another drop—after this bottle; say the high wassailers; beckoning the waiter.

Resolved: that we will not be content with coveting our neighbor's goods during 1914; say the legal lights; picking out the best hats in the café and departing to the shrine of Morpheus.

Resolved: that we will keep our "hands" from picking and stealing during 1914; say the potential princes of merchantdom, signing the order to the Cash Register Company.

Resolved: that we will nevermore perform an operation for appendicitis unless it is absolutely necessary—to get another large gob of gold before the patient kicks in; say the Darwinian doctors, reaffirming their belief that those who have the most fits should survive.

Resolved: that we will put the Kibosh on Superstition during 1914; say the perspiring priests; pronouncing the Benediction upon the hordes of New Year worshippers.

Resolved: that "weeping and wailing" don't interest us at all but this "gnashing of teeth" sounds as if Sheol might offer good business opportunities; say the "painless" dentists, stopping the anguished yowls of the first victim of the year with a rubber gag.

Resolved: that it is altogether too cold for comfort, say the icemen; feeding the fish in the artifishal ice.

Resolved; that it is altogether too hot for honesty, say the coalmen; hiring the heaviest drivers on the principle that fall things come to him who weights.

Resolved: that this business is a Virtue and not an art, say the lumbermen; footing up the Profit and Loss column for 1913.

Resolved: that we will remove our hats respectfully at the mention of Conservation during 1914, say the loggers; running red runes through a Map of Stumpage.

Resolved: that we will hold to a higher and more exalted tone in our editorials during 1914, says the editor of "Steam Machinery," writing this ribald rot.

But, thank heaving, Resolutions are made to be spoken and the atmosphere doesn't worry what gets into it any more.

△ ⊢▽ ♂

WE HAVE BORROWED the earth from Nature on the understanding that we are to pass it on to her children, after improving it insofar as we are able by way of interest on the loan.

To guard against any attempt of ours to forestall payment when payment is due, she has retained the services of an expert Attorney who has never been known to grant an extension or to fail in the collection of a single account.

She has also another attorney whose particular duty it is to see to the prompt and full payment of all interest as it falls due.

Him men used to call Nemesis, but in later days have learned to look upon as Natural Justice, the expression and executor of a great natural law.

Whoever will not pay his interest is promptly dispossessed of the earth by this servant of Nature's, nor may prayers or promises of amendment move him from the execution of that duty wherein he has his being.

May may choose to live or not to live but never both; and life is service, always and only, Service to the children of Nature which are his own children, his brothers and their children: Service in the knowledge of the Past and in the strength of the Present, with ever a great and glorious faith in the divine Future.

△ ⊢ ♂

DURING THE GLORIOUSLY bloody era of the Napoleonic wars, they came upon a certain young conscript who refused to serve his country under arms.

Brushing aside the moral scruples which he advanced as the reason for his refusal they taunted him with the age-long warrior-making taunt of cowardice.

"I am not afraid to die," he answered, "But I am afraid to kill!"

And so they ordered out the firing-squad and shot him as an example to his comrades.

The example failed, however, or seemed to fail; because his comrades rapturously rallied round the tri-colour and went out to kill or be killed for the greater glory of the Little Corporal.

△ ⊢ ♂

ONCE WHEN MEN WANTED to give thanks for the good of life they would take perfectly good cattle and make of them a burnt offering to set the saliva flowing upon the crest of high Olympus.

But now they burn their offerings in scientific fire-boxes, using the resultant energy to gain even greater good for themselves and begrudging the very smoke that mounts their tall chimneys to flaunt its flowing train of escaping B. T. U.'s under the nose of Nature.

Nor do they use good beef cattle in these days of heaven-aspiring costs: the gods must be content with coal—and often soft coal at that.

It is fortunate that gods, being such, can more readily adapt themselves to their environment than any other known form of life.

Were it not for this we might come to have no gods at all and then we would surely be in a heluva fix.

△ ⊢ ♂

ONCE IN A WHILE a man's brain is bound to get dusty from lying around in the dirt overmuch.

Fortunately, however, Science has already provided a specific remedy in the vacuum cleaner.

With one of these simple little instruments a very few moments' work should suffice to completely clean the most vacuous vacuum that ever modern man mistook for his Mind.

But there's no sense in cleaning out a vacuum unless the idea is to put something worth while in it; in fact it might turn out to be a decidedly dangerous proposition.

Nature, we know, gets goose-flesh all over her hide at the sight of one of these Weary Willies of the cosmos, and Nature has a narsty way of amputating things she takes exception to.

You cant have a really good vacuum so long as there is dust in it: so perhaps after all the vacuum cleaner was just another of our Economic Mistakes.

Seriously, however, we ought to pay a little more attention to the Minus

Minds among our humanity and cease, if we do no more, from adding to the present visible supply.

A man with a minus mind is a pretty hopeless proposition to have working for one, and yet said helpless human can never summon up enough snap to get working for himself.

Heaven forbid, however, that we should tamper with the seasonal crop of simpletons which are remaining medieval manufacturers need to furnish the motive power in their plants and factories, unless we can also elevate their employers to a point where they can remain so over a superior product.

Because to raise the standard of those who are beneath us in mental muscularity without developing our own would be only to increase the already superflous competition for our jobs:—rather than which all things eugenic and evangelistic can go chase themselves into the limbo of forgotten dates.

Wow! We have spoken.

IT IS A VERY FORTUNATE thing, from the standpoint of the Common Good, that most men are cowards.

Were it not so, as many sins would be committed as are now thought—and their name would surely be Legion.

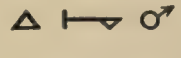
Most men are afraid to sin in Fact as they sin in thought, and so are convicted both of the sin and of cowardice.

For this very reason, perhaps, men have a certain admiration not unmingled with respect for the lusty Sinner who is not afraid to parade his sins openly in front of the world.

He has the courage of his conviction at least, although it is fortunate that conviction comes soon—and repression after it.

It may be, however, that Nemesis will not wait for the Fact before taking action, but will consider the thought as even worse than the thing its creator was afraid to express it by, just because the thinker *was* afraid.

In any event, it would seem the better part of courage for no man to think what he dare not do; whereby our mental atmosphere at least will become much purified.



THE IDEA WAS NEVER THAT you should not work for money because it is not worth the winning; rather that there are so many things better worth working for.

If you can only think reward in terms of dollars and cents, then work for money.

Work for dollars or doughnuts, prunes or prisms, work for love or the fun of it, work for any doggone reason you happen to feel sloshing around in your thought-tank, just so long as you work.

Surveying your individual reasons, Nature remarks "Ish ka bibble" in a bored tone and goes on to run the square and the level over the job.

If she pencils it O. K. you can go and collect whatever it is.

If she checks it for the cosmic scrap heap, watch out, Alphonso, watch out!—The buzzards of destiny are a'driftin down the sky of your soul with their eyes on the red meat.

The only way you can beat them to it is to make yourself sufficiently Useful for Nature to come back and shout "Shoo!"

She doesn't care any more for *you* than you care for a grain of steel in your saw: all she wants is the work done and she'll use you to help do it so long as you are usable—after which, the junk pile for yours!

"The Only Way to Handle Hardwood"

The story of how Trevette Babb McCormick operates at Sardis, Miss. How he avoids loss from sap-rot in Red Gum and from worms in White Oak

Done into print & pictures by Ye Editor of Steam Machinery for the especial benefit of his hardwood readers, to whose attention it is herewith commended

SAP-ROT, worms, and the rainy season have always constituted a combination in restraint of economical hardwood logging.

The approach of winter has always compelled the storing-ahead of millions of feet of timber, among which worms and sap-rot wrought costly havoc.

Two possible antidotes presented themselves—to skid the necessary surplus *after* the cold season was sufficiently far advanced to send the worms into hibernation (or whatever it is that worms do during the winter): or to log winter and summer, always keeping the supply about a week ahead of the demand at the mill but never more.

The obstacle in the way of adopting the last of these two prospective antidotes has always been the impossibility of working animals in hardwood forests during the wet season.

The obstacle in the way of adopting the first antidote has always been the impossibility of securing the necessary surplus of several million feet in the short time between the end of the worm-season and the commencement of the rainy-season in which skidding with animals becomes practically impossible.

Trevette Babb McCormick has found and is applying the answer to either or both of these seeming enigmas.

He doesn't lose a dollar from these avoidable causes any more; and, further, the cure has cut his skidding costs way below where they were before he found and applied it.

Since hardwood stumpage is based on old-time production-costs and losses, it can readily be imagined that the Net Profits he shows up for the C. M. Carrier Lumber & Mfg. Co. are very much greater than said company expected when they bought their timber; very much greater, also, than those of other hardwood companies who continue to log under the old disadvantages and shortcomings inseparable from the use of animals for skidding in hardwood territory.

TREVETTE BABB MCCORMICK, Vice President and General Manager of the C. M. Carrier Lumber and Manufacturing Company at Sardis, Mississippi, is a product of Saginaw, Michigan, a town which has been made famous by the Great Men who have come out of (and away from) it.

It has taken him some three score years to arrive at his present stage of all around plusness; most men would need twice as long to get half as far.

He knows logging from Alpha to Omega, knows it under every alias and can call it by its pet name wherever he meets it.

Much of his extraordinary success in dealing with men is attributable to his magnetic and sympathetic personality; men serve him well because he serves them well; they are anxious to please him because they respect and esteem him, not because they fear him.

His success in dealing with machines must be credited to his natural bias towards efficiency-plus and, in part, to his ancestry.

There never was a Scot yet, nor a man whose primogenital ancestors harked back to the land o' cakes, who could resist the lure of wheels and cranks, levers and gears.

All such are born with a craving to "see the wheels go round."

And so, despite the fact that he had no experience with self-propelling skidders, he did not hesitate to put one to work in his timber after having become convinced that it was the real and only solution to the problem of the hardwood logger.

This decision was accelerated by numerous visits to other operations where steam skidding was in vogue, though none of these operations could reproduce the peculiarly difficult conditions confronting him at Sardis.

Here they have a rank growth of underbrush, particularly cane which grows to the height of twenty-five and thirty feet, as thick around as your wrist and as impassable as a woven wire fence.

Through this jungle, a path had to be cut with machettes to every log, and even then the loss in skidding-animals was terrific.

This because the cut cane presents a snag-point as keen as a knife upon which the animals were continually impaling and crippling themselves.

Nine separate contractors have attempted in the past to supply the Carrier mill with timber at a reasonable price, but every one became insolvent due to losses occasioned by this cane and by the unsurmountable obstacles to skidding encountered during the rainy season.

Then they tried one big logging camp of their own and ran it long enough to prove beyond all doubt the utter impossibility

The Machine Ye Editor Saw at Sardis

of operating with animals under such conditions at any reasonable cost.

At this stage of affairs, Mr. McCormick began to cast around for a more practical method.

The yellowpiners everywhere were using steam skidders with apparent success; and though the obstacles in the way of successful steam skidding were immeasurably greater among his timber, yet he began to believe that the right machine could and would deliver the logs.

As an eventual result, he placed an order with the Clyde Iron Works of Duluth for a two-line, double-end self-propelling skidder, equipped with mechanical rehauls to return the skidding lines to the felled timber.

This machine it was that the Editor of STEAM MACHINERY saw at work among the cane beyond Lake Carrier.

The character of service it is rendering is best shown by a description of ye Editor's trip.

On Thursday, October 2nd, in the year of grace nineteen-thirteen, the clouds above the Sardis district absorbed about one-third of the cubic contents of Lake Carrier in order to be in readiness for the Scribe's arrival.

Thus, at five o'clock on Friday morning they were able to return said moisture upon the person of the Scribe at the rate of eleven and two-sevenths gallons per minute.

Under these conditions, gaily whistling snatches of Grand Opera, the Scribe set off down the mile and a half of concrete and cypress sidewalks which divided his hotel from the Carrier mill.

If any vague fears chanct to flit through his thought-tank concerning the possibility of Mr. McCormick declining firmly to take him out to the woods under such adverse climatic conditions, said fears were speedily dissipated on meeting and greeting the genial general manager of the C. M. Carrier Co.

Without even a casual comment on the climate, Mr. Mac led the way to where his auto-car panted at the leash and soon had it chug-chugging down the track into the leafy solitudes of the swamp.

Bull frogs and other amphibious insects lept lightly from the rails in advance of the car, while vaporized Lake Carrier continued to obey the law of gravity which ordered it up the sleeves and down the collars of the Scribe and Mr. Mac.

Mr. Mac didn't condescend to notice it; the Scribe gave a feeble imitation of a man pretending not to, and so after twenty-two miles of travel, a landing was made at the Logging Headquarters by the side of the permanent residue of Lake Carrier.

Here, while again vaporizing the absorbed quantity of lake with the assistance of a red-hot stove, Mr. Mac gave out a brief general sketch of his early experiences as transcribed in these preceeding paragraphs.

Before tackling the remaining five miles to the skidder, a supply of slickers was laid in at the commissary, which had the effect of causing the sun to flame out warmly and brightly:—How seldom it rains when one has an umbrella!

The last leg of the journey was completed in luxurious comfort and within a very few minutes the object of it hove in sight dead ahead but otherwise very much alive.

Despite the weather, the skidder was skidding right along up to its average—a daily seventy-

Trevette Babb McCormick

Vice-President & General Manager
C.M. CARRIER LBR. & MFG. CO.
Sardis, Miss.

Skidding Trail at Sardis

five thousand feet of white oak, red gum, etc., consisting of some two hundred fifty logs containing each an average three hundred feet.

One line was being operated on each side of the track, the rehauls running back six hundred sixty feet through cane growth so thick that no eye could follow them.

At the rate of about a log every five minutes, each line was building up a huge deck of giant logs with certainty, accuracy and dispatch.

Every log, of course, was not a giant in size, but some contained a good eight hundred feet or more despite the fact that all are skidded in short lengths.

Cones made of sheet-steel enclosing the skidding tongs were fitted over the nose of each incoming log while breaking a new skidway.

These cones serve the same purpose with relation to the tangled growth of cane as the cow catcher on a locomotive does to the cantankerous kine that erstwhile and anon wander into its path.

It is never necessary to cut a skidding-trail as during the reign of cattle-skidding; the skidder is so powerful that whole regiments of lofty canes go down before the incoming log like alfalfa beneath a modern mowing-machine.

Even the littlest logs of them all crash through the opening ranks with insulting indifference.

While the Scribe waited expectantly with poised kodak, balanced on the end of a slippery red gum some fifteen feet up in a finished deck, one such came crashing through the cane like a rogue elephant on a rory-eyed rampage.

With an unbelievable din of ruined worlds, it finally danced daintily out of the underbrush and skipped up the pile.

Revealed in all the nakedness of the October Morn, it contained about a hundred feet and looked, in its huge cone, much like a very small boy masquerading in his dad's Sundaygotomeetin silk hat.

The cane was certainly a caution, however; though Mr. Mac assured the Scribe that it was the lightest they have been in for eight years past.

This he could the more readily credit in that some had been passed further down the track between Headquarters and the mill which, in the blinding rain, he mistook for honest-to-agnes timber, complimenting Mr. Mac on the size of his white oak.

Notwithstanding all which, this single skidder with its crew of ten men logs the mill with ease the whole year round, although of course a great deal of skidding time is lost in the winter due to impassable high water.

To offset this, a surplus of some three million feet is secured after October the First, when the worms have ceased to worry and the sap-rot is at rest.

A good part of this surplus is obtained by driving the Clyde to capacity; the balance being brought up by a little old befo'-the-wah skidder which was wished on Mr. Mac at the time he came to Sardis.

This machine, while a heluva nuisance to get ready for skidding, brings in its little daily quota of logs once it is ready to work, and since they don't depend on it for anything, they are so much ahead anyhow.

Mr. Mac was doubly-unfortunate in having things wished on him, a loader of the same type

and antiquity being his second Curse.

This loader is of that breed which needs to be ponderously jacked up on skids at every set; once set, however, he succeeds in getting pretty good service out of it through the genius of taking infinite pains, and so the old veterans continue for yet a little while upon the payroll instead of on the pension list.

Now part of Mr. Mac's success as the Original Self-Propelling-Steam-Skidder-Hardwooder must be filched from him at this point and conveyed over to Mr. C. M. Swango, his able assistant.

Mr. Swango, in his capacity of Superintendent of Woods, is a fellow-worshipper at the shrine of Steam, declaring it the only medium through which to garner true economy and efficiency in logging.

Since upon him falls the brunt of delivering the daily log-quota to the mill, his utterance may be taken as that of one having authority and not as the Scribe.

He became particularly enthusiastic on the easy-moving feature of the new skidder, recalling one occasion when they moved a mile down a switch to the main line, up the main line a quarter-mile and down another switch, taking up and relaying the rehauls and getting started to skid again just fifty-five minutes after stopping at the old set.

This was of course a very exceptional move: as a regular thing they move much shorter distances and take only from fifteen to twenty minutes from stop to re-start of skidding.

Fifty-six pound steel is used on

Mr. McCormick and Mr. Swango

all spurs as also on the main line, although this weight is not necessary to support the well-distributed weight of their skidder.

They bought it from the I. C. —regular sixty pound stuff worn down by time and trains to the weight specified, and that's how they happened to hit on that particular weight of rail.

Now on the skidder they use three-quarter inch skidding lines, five-eighths rehauls and three-eighths spotting, or messenger line as it is called in this part of the country.

With this cable and the efficient oversight of Mr. Swango, they have remained free from trouble from dawn till dark, day after day, since a time unto which the memory of man runneth not to the contrary.

An interesting commentary on the character of underbrush is given in the necessity of perching the flagmen in the upper branches of trees among the buzzards, where they can command a view of both log and skidder and make their signals to the latter observed.

And now, having taken pictures of all the available scenery, the Scribe prepared to chug-chug to Headquarters beside Lake Carrier, there to be regaled with pork, prunes, pie and other desirable condiments in accordance with the laws of nature in such cases made and provided.

Lake Carrier, formerly known as Lake Bobo, is famous for its piscatorial possibilities: vast quantities of perch, catfish and buffalo being taken from its waters for food every day, while sixfoot gar furnish sport of a more thrilling order to those fishermen who are sportsmen rather than utilitarians.

The country round about the lake used to be a paradise for hunters also, but said persons thronged into paradise in such numbers that Mr. Mac was constrained to give an impersonation of an angel with a fiery sword.

Bear, deer, wild turkey and other succulent inhabitants of the wildwoods have become so thick, since the edict of prohibition, that they have to be

Boarding House at Lake Carrier

Homes of white employees

General View of Camp Carrier

pushed out of the way to avoid hurting them when skidding.

They almost had a pet eighty pound bear at Logging Headquarters.

The bear was caught alive and stuck around the camp contentedly for some moons.

Eventually, however, the call o' the wild overpowered the call o' free rations and Brother Bear vanished out of mortal sight.

The idea had been to train him up as a sort of automatic Game Law, to insure the intact preservation of Mr. Mac's mandate.

Nothing of further interest remaining in the woods, Mr. Mac and the Scribe once more boarded the trusty chugger and began their twenty-two mile return trip to the mill.

Arrived here, the Scribe made a personally-conducted tour of the plant which covers thirty-five acres, pausing particularly to observe the method of quarter-sawing.

Since some of our readers may be as unfamiliar with this process as was the Scribe before his visit to Sardis, a brief description may not be wasted.

The Carrier mill has two band saws, one of which is devoted, as exclusively as possible, to quarter-sawing.

To keep this saw occupied continuously on this class of work it is necessary that every fifth log should be quarter-sawable.

The other bandsaw chews up the hoi polloi for the lumber piles, and in addition, halves all logs that look as if they might be quarter-sawable.

If they make good inside, this saw takes three or four boards of fine heart-stuff out of the

Departing View of Skidder

center, continuing until the grain begins to peter out, when the remainder is divided into quarters and passed over to the other saw.

Here they finish the job, cutting at a different angle as often as is necessary to retain the grain.

Some magnificent boards, thirty inches and more in width and beautifully grained, came off while the Scribe watched.

Here they quarter-saw some red gum as well as white oak, picking the quarters carefully.

Quarter-sawed gum, so Mr. Mac informed the Scribe, will never warp and brings a better price than the straight-sawed variety.

Now the American Lumberman has recently described the manufacturing department of this great industry so thoroughly that it seems the better part of policy for this article to concern itself nore particularly with the New Idea in logging.

One thing that was particularly noticeable, however, was the exhaustive utilization made by this company of every foot of the eighteen millions of timber sent in by the logging department every year.

After passing through the various plants, nothing remains but a few little slabs, and even these are sold to the people of Sardis for kindling at a dollar the load.

Another feature of interest was the power-house, from which the triple towns of Batesville, Sardis and Como are supplied with electric current day and night.

Protection against fire has been carried to the limit at this mill—the Scribe particularly noted the distance at which hydrants were located away from buildings—sufficiently far to make it possible to reach them even though the nearest building should have become an imitation inferno.

This is a suggestion of the Manufacturing Lumbermen's Underwriters, and sure enough, on inquiry, the Scribe found that the company is a member of that institution.

Mr. Mac declared it to be a crackerjack insurance proposition, saving them some 40% per annum over old-line rates.

The Bending Works, where they take strips of hickory and such and bend them into semi-circles, after steaming them, was another novelty to the Scribe.

The finished product of this department is made into rims

for buggies, wagons and automobiles.

A. P. Steele, Sales Manager for the Carrierco, was out on the Pacific Coast selling Carrier Quarter-Sawed and things at the time of our visit.

This was a source of sincere disappointment to the Scribe, and should be to his readers; since Mr. Steele has the reputation of being a Speed King when it comes to selling lumber, and might have dropped some pearls of priceless information as to how it is done, had he been there to be interviewed.

It is part of the sales-policy of this house to sell always at a fair profit—and this is not so universal as you might think.

During the recent price-cutting war in red gum, the Carrierco were about the only ones who sat tight and nailed the price-list to the mast; in consequence they were about the only ones who were in a position to issue the statement "Ish ka bibble!" to the trade-press reporters.

The time has now arrived, however, for the Scribe to shake hands with and bid farewell to each of the three hundred fifty permanent employees of the company and prepare to wend his way back to his hotel in time to pack for the night train to Memphis.

Mr. Mac consented to accompany him to that village, partly to attend a red gum meeting at the Gayoso and partly to get in a little practice functioning under his little-used title of Vice-President.

He is always General Manager around mills and woods, only in New Orleans, Memphis and other large and complete cities does he pay any attention to the Vice part.

While at Memphis, the Scribe discovered in the course of a tour around under Mr. Mac's tutelage that he knew about every third person in the city (in addition to many of the first) and was most decidedly persona grata with high and lowbrows alike.

It was with sincere regret indeed that he finally tore himself away to return to the Gayoso, there to write these final words at the conclusion of a pleasant and profitable trip:—

THE END.

TRAVELITIS

The Spirit of These Times

In these swift days of aeroplanes
And parasang-a-minute trains
The world has placed beneath a ban
The stay-at-home, untravelled man.

With what supreme contempt she speaks
Of him who cares not for nor seeks
The joys of rail and water ways
On Rushem's "Tour in Ninety Days"!

The very children in these years
Are born on trains and steamboat piers,
And learn the modicum they know
Thru cramming guide-books on the go.

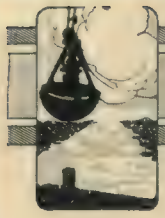
Speak of the grandeur that was Greece
And they'll regret the recent peace;
Mention the glory that was Rome,
And they'll describe St. Peter's dome.

They view that man with crushing scorn
Who never saw the Matterhorn
They speak with cold contempt of all
Who own no chip of Chinese Wall.

You have no entre to their set
If Cairo does not know you yet;
They care not what he says or thinks
Who has not even seen the Sphinx.

Yet, tho' they measure men in miles
MacHinery sits at home and smiles
And, speaking for himself, he rules
That fools who travel, still are—fools!

C. Henry.

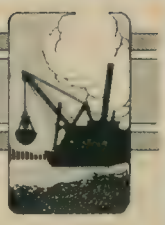


Reclamation Project

of the NEW ORLEANS LAKE SHORE LAND COMPANY

Described for

STEAM MACHINERY



by

A. M. Shaw, Consulting Engineer.
MEMBER AMERICAN SOCIETY CIVIL ENGINEERS

THE owners of what is known as the "Little Woods Tract," are local men who have made their money in New Orleans, and who have shown their faith in the future of the hitherto waste lands of their State, by backing one of the largest reclamation projects of this section, including as it does about 7,500 acres. The lands lie adjacent to the City, an excellent auto road running to and passing entirely through the property. The west end of the tract is about eight miles from the intersection of Canal and Royal Streets, the center of the retail district of New Orleans. The property fronts for seven miles on Lake Pontchartrain where fine fishing and bathing may be found. The people of New Orleans are just beginning to learn that excellent bathing beaches, which are within a few minutes ride from their places of business, have been passed by for others much more distant and no better.

Along the shore of the lake, the soil is sandy loam with occasional river sand or clay deposits while the bulk of the land is a black humus soil overlying the sharkey clay subsoil usual in this section. Geologists tell us that all of Southeastern Louisiana was at one time a part of the Gulf of Mexico, but that a gradual building up of the gulf bed by deposits brought down by the Mississippi River has raised the general level until it is from a few inches to several feet above sea level. It is interesting to note the evolution of the soils of the lower delta country. The materials brought down by the great Father of Waters, coming as it does from the fertile fields of every portion of the upper valley, are wonderfully complex in their make up, and contain every element necessary to insure rapid plant growth. The result is that as soon as the land has been built up high enough to insure against frequent overflows, a rank growth of sea marsh grasses cover the land. These grasses decay and, combining with the material brought in by the river, build up the general land level still further. As the surface gradually rises above the level of the most frequent overflows, the nature of the grasses gradually changes from the hard round stemed salt marsh grass to the "Saw grass," so common in the Florida Everglades and then to wild cane and other grasses available for pasture. On most of the Louisiana prairie land there is no timber, but along and near the shore of Lake Pontchartrain, irregularly placed mounds of clam shells occur and on these mounds and the higher land connecting them, immense live oaks and other native trees are found. About twenty miles of shell roads have already been built on the property, all of the shells having been secured from these conveniently placed deposits and the supply has hardly been perceptibly diminished.

In the reclamation of the Louisiana wet prairies, the following steps are necessary, (a) Erection of protection levees to prevent overflow from outside waters. The height of these levees may vary from one foot to seven or eight feet in height, depending on the location and proximity to the Gulf.

(b) Construction of a system of interior canals for the collection and storage of rain water.

(c) Construction of a pumping plant to elevate the water from a suitable level in the interior canals to an outfall canal, bayou or lake. The pumping equipment of the "Little Woods" project consists of two units, a steam driven plant having a capacity of about 80,000 gallons per minute and an electrically driven plant of 160,000 gallons per minute capacity. This latter plant is of the most modern design and is equipped in a manner to insure reliable operation under the varying conditions that occur in land drainage. It is housed in a fire proof building of attractive design.

(d) Digging of interior drainage ditches at close intervals to insure the thorough drainage of the soil and the construction of roads, bridges and culverts necessary for carrying on farming operations.

A number of different dredges were employed in the construction of the interior canals and the outer protection levee but the type found best suited to these special soil conditions was the grab bucket dredge equipped with a comparatively long boom. The dredge recently completed by the N. O. Lake Shore Land Co., was constructed as follows:

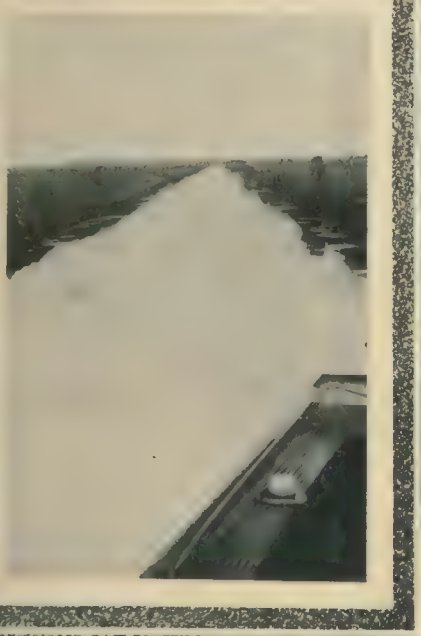
Hull, 24x75 feet heavy cypress construction throughout.

Boom, 14"x14"x60 feet, long leaf yellow pine.

Boiler, 60 H. P. "economy" type. Owing to poor feed water, the plant is run condensing and the make up water is passed thru a Murphy High Speed Evaporator.

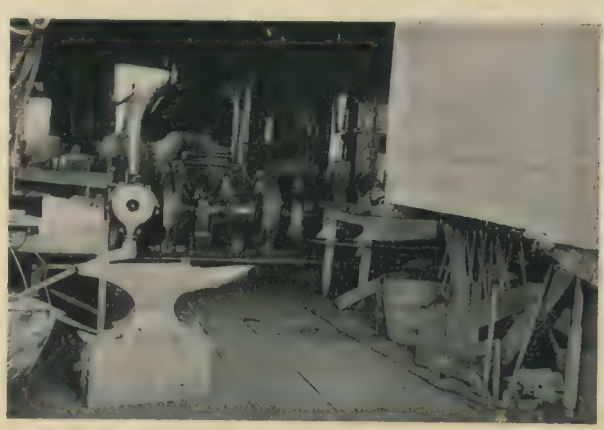
Engines are the Clyde Special dredge engines, equipped thruout with friction clutches. All operations of the machinery are controlled by the operator whose platform is placed so as to give him full view of the canal and levee. A one yard Hayward Orange Peel Bucket is used.

A direct connected engine and generator set furnishes light for night work. Four reflectors of special design, placed on the A-frame throw light from so many different angles that the



MAIN CANAL ON NEW ORLEANS LAKE SHORE RECLAMATION WORK

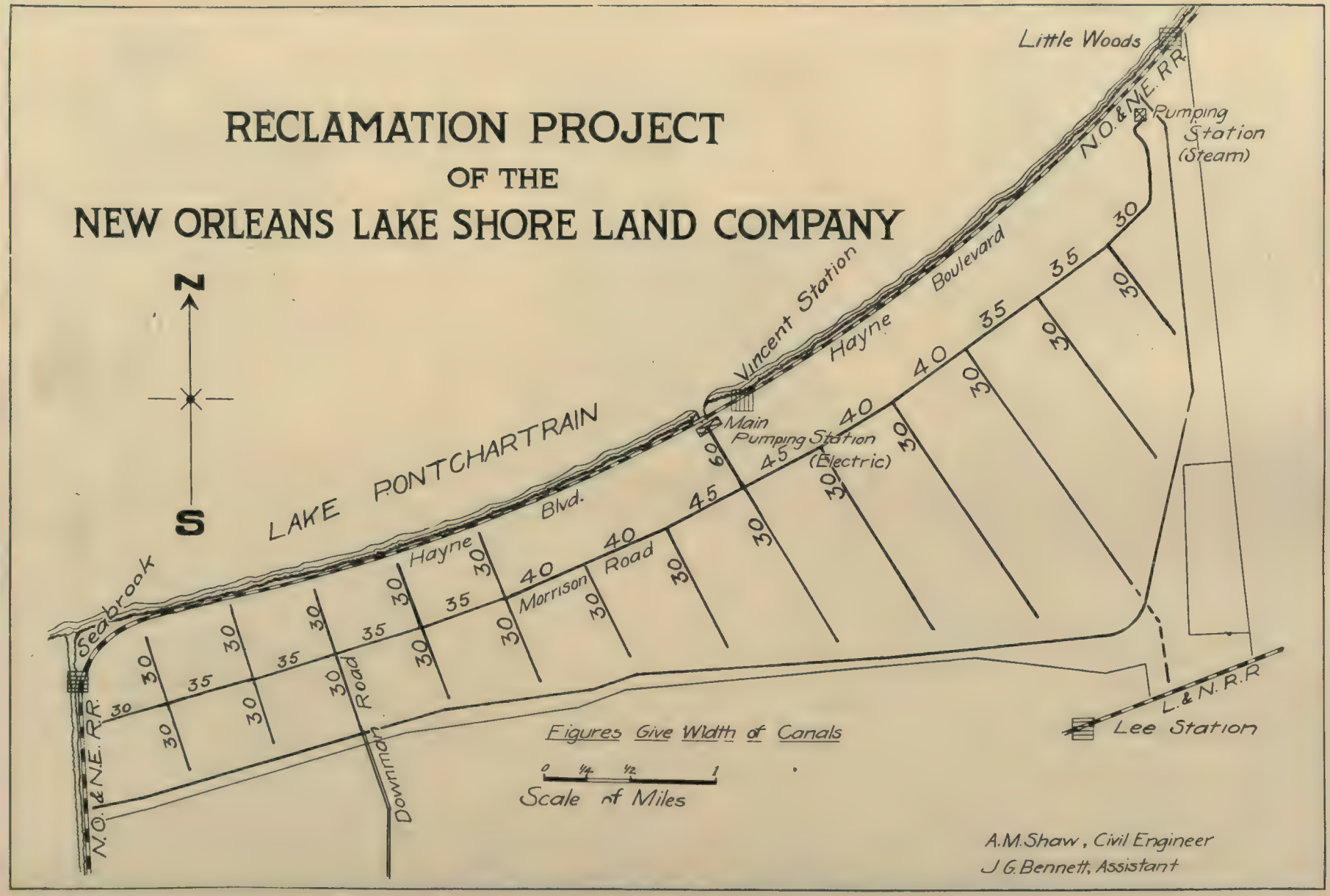
ONE YARD ORANGE PEEL DREDGE AT WORK



INTERIOR VIEW OF DREDGE

WHAT THE DREDGE HAS TO HANDLE

CYPRESS STUMP PULLED WITH ONE YARD ORANGE PEEL BUCKET


RECLAMATION PROJECT
OF THE
NEW ORLEANS LAKE SHORE LAND COMPANY
N
S
LAKE PONTCHARTRAIN
Little Woods
N.O. & N.E. R.R.
Pumping Station (Steam)
Vincent Station
Hayne Boulevard
Main Pumping Station (Electric)
Seabrook
Hayne Blvd.
Morrison Road
Downman Road
N.O. & N.E. R.R.
L. & N. R.R.
Lee Station
Figures Give Width of Canals
0 1/4 1/2 1
Scale of Miles
A.M. Shaw, Civil Engineer
J.G. Bennett, Assistant

shadows usually found so annoying in night dredging do not occur. This dredge was installed as a permanent part of the equipment necessary for the proper construction and maintenance of the interior canals.

In farming the newly reclaimed lands, some difficulty is experienced during the first year owing to the light and loose nature of the top soil. By one year cropping, the soil becomes more compacted and may be farmed in the usual manner. The fertility of this soil has never been questioned, and now that it has been demonstrated that the land is susceptible of economical reclamation, it is only a question of time when the millions of acres of swamp land of the State will be reclaimed, and will be supporting thousands of families.

Louisiana has always been known and rightly so, as a state of tremendous wealth in agricultural resources, but her great areas of non-revenue producing land are not as well known. There are now over three million acres of land within fifty miles of New Orleans which can be reclaimed and farmed at a profit.

THE END.

Electrically Seasoned Wood

By

Dr. Leonard Keene Hirshberg, A. B., M. A., M. B.
(Johns Hopkins)

Why do houses, barns, and wooden buildings show the effects of time? Why do wooden wharfs rot? Wooden bridges and piers often collapse suddenly and cause many deaths due to the decay of the timbers and joices. Decay and the rottening of wood is usually traceable to moulds and microbes which slowly develop and thrive in the green wood and moist timber. Lumbermen, builders, and carpenters have always aimed to dry or season timber in some way to postpone the rotting of wood. Many methods such as steaming, drying, sunning, cutting, pressing, and treating lumber chemically have been used for this purpose.

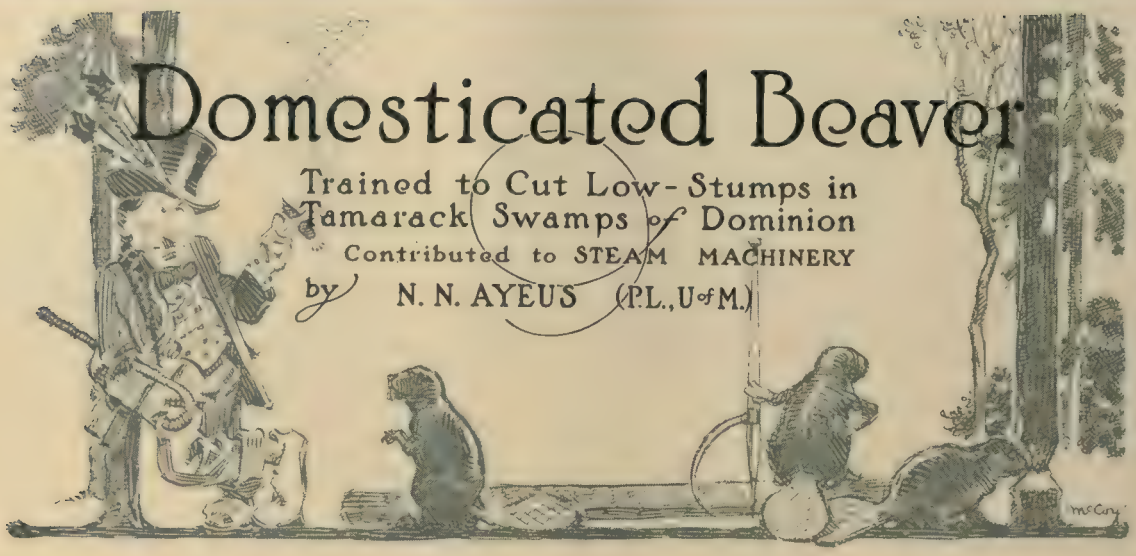
Comes now the newest, cheapest, and most simple process for preventing the decay of wood. Devised by Mr. Nodon, the engineer, it goes by the name of the Nodon method of seasoning by electricity.

The plan is very simple. The newly felled trees as soon as the axe leaves them are sawn into thick planks and then placed upon a temporary, false floor. They are piled one on top of the other. Moistened matting or something damp is placed in layers between each plank. Thus the current is conducted from one to the other while an alternating electric circuit is passed through all of them for about ten hours.

The result, of course, is to send enough current to cause chemical changes in the sap and "cellulose" of the wood. These chemicals not only clot and dry easily, but seem to produce certain anti-microbic or disinfecting effects which retard the moulds and fungi of decay.

Lumber and green wood thus treated may after less than a month be used in construction work, whereas most seasoning methods hitherto employed require a very long time before the timber can be used for building operations. Moreover, electrically cured wood is harder, stronger, and more easily manipulated than any others. Moisture cannot penetrate it and hence warping which is common in air seasoned lumber, is almost an unknown thing.

All in all, the new Nodon electric process bids fair to make wood a stronger competitor than ever with brick, mortar, marble, iron and cement, certainly fire cannot attack a wood free of air and pores as easily as a chemically saturated timber and evidently if the wood artificially bathed in chemicals is less likely to burn when exposed to flames, electrically deposited chemicals must have some similar protective power.



Domesticated Beaver

Trained to Cut Low-Stumps in Tamarack Swamps of Dominion

Contributed to STEAM MACHINERY

by N. N. AYEUS (P.L., U of M.)

NOW, from the Frozen North, from the land where R. B. Alice (Roarer Borey) holds sway in the long wintertime and Helen Hiwater (daughter of Mrs. Sippy) during the all-too-brief summer, comes a strange story of the ingenuity of man as applied to his logging problems in said weeping wilderness.

Here where the triumphant tamarack tickles the angels' toes with its topmost tuft, they have logging problems peculiarly their own, which can be met and overcome only after much mental strife of a decidedly distressing nature.

The first and foremost of these problems is that of felling their timber.

For nine months out of the twelve, the cold in that region is so intense that not only is the steel of which ax-blades are often made frozen to a friable state but the tamarack timber itself becomes so many pillars of ice, defying said friable axes to the limit and—if felled at all—crashing into a trillion crystals with the shock.

The remainder of the twelve month is devoted to Helen Hiwater, the young lady referred to in a preceeding paragraph, who is the tutelary deitess of the district during its brief and infrequent summer.

While she presides it is utterly, if not quite, impossible to send sawyers into the woods to fell the timber without first equipping them with complete and cumbersome diving costumes.

This naturally entails considerable expense, both for the necessary paraphernalia and for the salaries demanded by those skilled woodsmen who are also trained as deep-sea divers; besides which the work is unprofitably slow, due to the fact that aqua impura is a cloying medium thru which to swing an ax.

Various experiments along this line were tried, all of them however without success.

An attempt was made to substitute oxygen helmets for complete deep-sea costumes on the supposition that the water-pressure at a depth of twenty-three feet was not sufficient to warrant any protection against it.

To avoid the destruction of clothing and to conserve freedom of action beneath water, regular two-piece bathing costumes were substituted.

The fallacy of this experiment was not long in becoming manifest.

The terrific chill to which the sawyers were subjected by reason of their inadequate protection caused their teeth to chatter at such a rate that the noise, reverberating inside their aluminum helmets, completely blinded them for the time, preventing them from using their axes with any degree of what might be termed accuracy.

In the face of this failure and the abortive nature of other experiments to a similar end, it began to seem as if these tremendously valuable timber growths must be abandoned to the beasts of the air and the birds of the forest.

At this pessimistic point in the arboreal affairs of the Dominion, a young halfbreed came paddling a little raft of tamarack logs down the principal street of Menda City.

Little did the all-but-barren lumber-barons seated on the upper deck of the largest hotelery in town think that beneath his battered bearskin cap there buzzed a brain which was about to effect their salvation! But, as we shall speedily perceive, such was indeed the event.

That evening, after the aristocracy of the arbors had dined luxuriously on beans and bottled Bud., the young man came slowly into the lobby, twisting his greasy cap between his greasier fingers, meanwhile endeavoring to restrain the extravagant antics of two tame beaver which gaily scampered in and out among the feet of those present.

After the accustomed interchange of greetings the halfbreed commenced, in the husky voice of a wilderness-dweller, to tell the strange story of his life.

The offspring of mixed French and Indian blood, he was born in a little Indian village in the land of the Inco-ga-nita where his happy childhood days were passed amid the pleasures of the mimic chase by forest and flood.

One morning, a moon and three suns before the changing seasons had chased H. Hiwater from the destined throne of R. B. Alice, he chanced to wander

far from the maternal tepee into the dim and drippy recesses of the tamarack swamp.

Here night found him, as convincingly lost despite his Indian blood as any Eastern tendertoes who ever tried to hunt among the Mississippi bottoms.

Two suns swept their narrowing arcs across the chilling skies, and still the little halfbreed remained lost among the wilderness, feeding on blueberries and drinking the stagnant waters of the swamp.

Next morning, as he was seated disconsolately upon a fallen tree calling upon Manitou to get him out of that for the love of Mike, his naturally keen sense of hearing detected an unmistakable sound in the neighbouring brake.

Mentally comparing it to the effect produced by a hippopotamus eating hay, our hero lept from his log and followed his ears to where a huge colony of beaver were engaged in preparing their winter camp.

The origin of the noise by which his attention had been attracted discovered itself in the activities of the elder beaver who were all busily engaged in felling tamarack with their curious chisel-teeth, dropping a tree every few minutes by dint of their unstinted exertions.

Approaching the largest and most-important-appearing beaver in the colony, the young halfbreed (of whom his littlebrothersofthewild did not seem in the least afraid) addressed his remarks to him, as the probable chief.

"O Beaver, Father Beaver!" he said, dropping readily into a paraphrase of Macauley's Lays of Ancient Rome,—"To whom the Inco-ga-nita pray: an Inco-ga-nita's arms and life take thou in charge this day!"

Overcome with astonishment at hearing so ready an adaption of these famous words of Horatius from the lips of a halfbreed, the old beaver readily consented to his occupying a part of the chiefly lodge after it was built.

In the meantime he instructed the new member of the colony (for as such he was accepted) to aid in the important work of rearing the dam upon which they had been engaged at the time of his arrival.

His teeth not being adapted to the work of felling and bucking logs, he devoted himself to rolling the short pieces down the banks to the little stream,; where with the assistance of the beaver, he placed them in position in the dam.

Swamp Sawyer Going to Work

Day after day passed happily and healthily at this employment, until at length the dam was all completed and the water commenced to back up over the low ground upon which the beaver had erected their lodges.

That of the chief, in accordance with his original offer of protection, had been builded with an extra large chamber in its top story for the use of our hero, part of which was designed to project above the coming ice and provide ventilation.

Taking possession of this commodious apartment before the rapidly-rising waters could block the entrance, our hero composed himself to spend the long winter in comfortable contemplation of the cosmos.

Having completed this interesting work to his own entire satisfaction and hearing the evidences of renewed struggle between H. Hiwater and R. B. Alice outside his apartment, he bethought him that it was high time to be up and doing if he was ever to borrow hunks of chewin' from his kind again.

Fired with such memories and dreams, he hastened to remove the roof of his chamber and step out upon the rapidly honeycombing ice surrounding it.

After remaining in one position for nine months he was, not ununnaturally, a little stiff; but a sharp run thru the sloshy swamp soon restored the pliancy of youth, sending the blood bounding through veins and arteries with renewed vigor.

He now bethought him on the building of some kind of watercraft upon which to return to human habitations; and, having made a mental model, called upon the chief beaver for some assistance in his projected work.

This the chief readily granted, although not without many protestations of regret at the prospect of so soon losing the companionship of his young human friend.

Working with right goodwill, the beaver colony had soon felled him an ample supply of tamarack from which he proceeded to construct a small but serviceable raft, binding the logs together with twining vines taken from the forest.

Since he had no tools with which to shape a paddle, the chief kindly made him a present of the two young beaver who were introduced earlier in our history.

It became the duty of these to seat themselves one on either end of a projecting log running thru the center of the raft, from which position they furnished an ample supply of motive power by the rapid manipulation of their broad and powerful tails.

The moment of parting having now arrived, our hero and the chief performed the rite of blood brotherhood, solemnly swearing to come to each other's aid whensoever occasion should demand.

Our hero then set off through the swamp on his little raft pro-

pelled at a rapid rate by the exertions of his beaver boatmen and, after a successful voyage of many days, arrived safely in Menda City where our story first found him.

As can well be imagined, the audience listened to this narrative with feelings of the utmost astonishment and would have been tempted to disbelieve it utterly, had not the simple and sincere manner of its narrator convinced them that he did not possess the makings of a good prevaricator.

Having hastily christened him the Mowgli of Menda City, in memory of Rudyard Kipling, they proceeded to consider the possible bearing of his strange adventure on their indiviudal fortunes.

On hearing of the facility and speed with which the beaver colony had felled their inaccessable tamarack, each seemed to give birth to a similar idea almost simultaneously.

This idea, as our more astute readers will already have conceived, was to place our half-breed hero in charge of a gang of beaver in the capacity of saw-boss, whereby they entertained strong hopes of rapidly recovering the greater part of the tamarack throughout their entire holdings.

Arrangements to this end were rapidly concluded and a few days later our hero returned to the beaver colony armed with power to conclude an agreement with the chief for the hiring of his band during a part of the summer months.

Sighting Menda City

Yielding to the claims of his oath and to the suggested offering of ample food of a superior sort to supply the entire colony the year around, the old chief rapidly rallied his forces around him and proceeded to place them at the disposal of our hero.

Some little difficulty was encountered at the outset in prevailing upon the beaver to fell their trees low enough to prevent excessive waste of timber but eventually a twelve inch stump was agreed upon as a standard, after which no further trouble was experienced.

The work of domesticating the beaver and of breeding them for the especial purpose of felling tamarack is now going on at a great pace throughout the more northerly parts of the Dominion, vast quantities of valuable timber which would otherwise have gone to waste being recovered every summer by their aid.

It is interesting and gratifying to note that the young half-breed who was the originator of this great movement has been elevated to the position of Beaver-Master for the Dominion with a salary entirely adequate to the few needs of himself and his paternal relative—who turned up providentially at the tidings of his offspring's well-deserved good fortune.

THE END.

SKIDDERWOCKY

The Loggers' Jabberwock

'Twas woodsy, and the yellow pine
Did cone and krinkle in the land:
All twangled was the undervine
And the wild bulls inspanned.

He found his Greaserskidders slow,
He found his bullwops slump and slack:
He slew them there, and with his dough
He came gallumping back.

Where the steelskidders snorted steam
He glumped with wilfish brow and gun:
He shot one on the hinterbeam
And told Dad what he'd done.

"And has thou caught the Skidderbug?
—Come to me arms, me beamish boy!"
The Ancient sirened in his lug,
And chortled in his joy.

'Twas woodsy, and the yellow pine
Did cone and krinkle in the land:
All twangled was the undervine,
But the wild bulls outspanned.

C. HENRY

Famous Loggers
in Picture & Pome

Done under Protest for STEAM MACHINERY by

Trevette Babb McCormick

Hardwoodsman and Cosmopolite

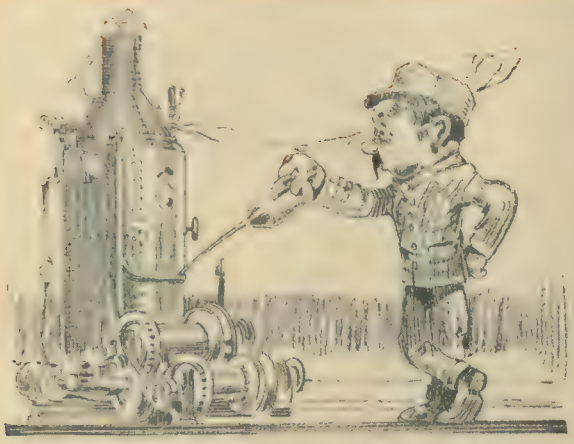
There's a little spot called Sardis
Where the Carrier mill and yard is,
And it's there my mind will wander
When I think of hardwood men.
They've an inner-circle denter
In that little hardwood center
Who has learned how *not* to squander
What they keep inside Big Ben.

When it comes to hardwood skidding
You've just got to quit your kidding
Cause he's got it going stronger
Than a million tons of brick.
Tho' the climate isn't ever
What you might call half-way clever
Yet he keeps on logging longer
Than his longest white-oak stick.

He's a regular hum-dinger,
He's a homeward-bacon-bringer
And his little logging hollow
Aint his *only* stamping ground.
If he gets you in the city
You'll be worthy of all pity
If you even *try* to follow
That McCormick man around!

C. HENRY

EDITORIAL TOE NOTE:—You can sing this to the tune of "Where the River Shannon Flows" if you feel that way about it.



How to keep your Hoist Happy

Dont's For The Boss

Written for "Steam Machinery"
by A. E. Holcomb

1. Don't kick, when you buy on price instead of quality considerations, if you only get value received. Let it be a warning to you to give your first attention to quality.

2. Don't expect to lift 15 tons with your 5 ton derrick because you change the hoist line from 2 parts to 7 parts. The derrick fittings were only made strong enough to lift 5 tons safely.

3. Don't expect iron gears and ratchets to stand the shocks that steel ones would.

4. Don't forget that the strength of shafting varies as the cube of the diameter.

5. Don't forget when buying an engine that a long crosshead is very much better than a short one. The back thrust of the connecting rod has a tendency to rock the crosshead and cause it to hug on the guide. With a short crosshead, if the gibs are not kept properly shimmed up to take care of the wear, the hugging of the crossheads on the guides will materially cut down the power of the engine.

6. Don't forget that the better the crank discs are balanced, the more power the engine will have, as vibration always means lost power.

7. Don't forget to check all equipment, tools and supplies when received. It will save trouble and hard feelings later.

8. Don't allow the men to receipt for material delivered to job. Such receipts should only be signed by the foreman or chief clerk in the office.

9. Don't make any changes in the work without getting the consent, in writing, of the engineer in charge.

10. Don't fail to keep an exact record of all changes made in the work.

11. Don't lay off all your men when it rains so hard that the regular work cannot be done. Keep your best men and set them to work making repairs, sharpening tools, greasing cables, sawing the handles off of worn out shovels and cleaning up.

12. Don't allow the men to throw chisels, augers, adzes and other sharp tools loose into a tool box. A little time spent making racks for the tools will save hours of labor resharpening them.

13. Don't pile bags of cement on the ground nor leave them exposed to the weather. Cement must be kept dry.

14. Don't allow the men to take the freshest cement. The oldest should always be used first.

15. Don't expect unpainted derrick timbers to last as long as they would if painted and taken care of.

16. Don't allow timbers or lumber to lie out exposed to the weather unless you like it better warped and checked.

17. Don't forget when piling up your timber or lumber to leave air spaces and give the cover sufficient pitch so that rain will readily run off.

18. Don't throw away broken sheaves with good bushings in them. Knock out the bushings and save them to replace worn ones in other sheaves.

19. Don't throw away a worn out suction hose until you have taken off and put away the couplings. They are worth good money.

20. Don't let your engine stand out exposed to the weather. Keep a house over it.

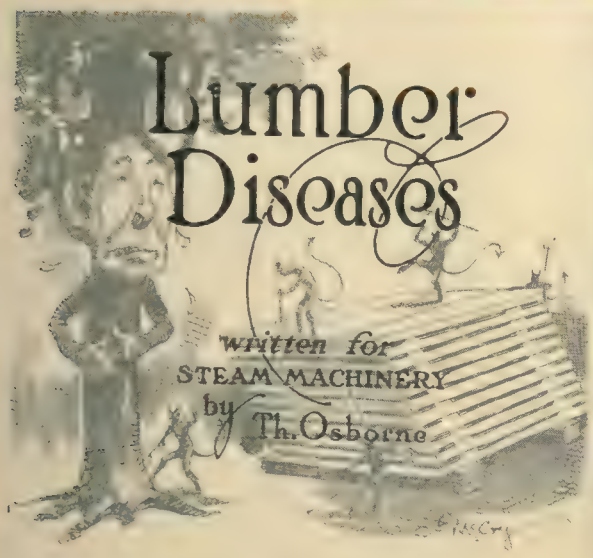
21. Don't, on concrete work, expect to get as good results from trying to run both your mixer and hoist from one large engine as you would if you used a smaller separate engine for each. The capacity of the mixer must necessarily govern the amount of work done in a day and should, therefore, be run steadily with a governor on the engine and the hoist should be run in such a manner as to take away the mix without delaying the mixer or compelling it to accommodate its motions to those of the hoist.

22. Don't neglect the covering up of marble and other finished work to protect it from injury while working on something else. It is somewhat aggravating to see expensive work spoiled by carelessness.

23. Don't neglect carrying fire and liability insurance.

24. Don't hand out tools to the men without taking a check for them, so that responsibility for their loss can be properly placed.

25. Don't delay the firing of a man who isn't making good. An inefficient shirker will discourage the others and destroy the "Morale" of your whole force if kept on the pay roll.



No. 1. Dry Rot.

IT is within every one's knowledge that lumber, which has been cut down, sawn and piled, is liable to be attacked by disease, which may affect it either when stored in yards or after it has been used for building or construction purposes.

It then undergoes degeneration very rapidly from a disease known as "dry rot." The term is a general one, as there are several distinct forms of it. In the following article some details of the disease are given.

Dry rot in lumber of the ordinary type, more especially deal or fir, may be recognized by the following signs: The timber changes color, becoming darker; the usual pale tint of healthy deal becomes a yellowish brown; there is a distinct change in its specific weight, which arises from a loss of substance. A cracking and warping of the wood occurs at the same time, arising from shrinkage as the structure of the wood loses its water due to evaporation. Should only one side of a board be attacked, it warps or bends and when the disease is severe the lumber presents the appearance of having been scorched.

Should the lumber be wet the portions attacked are so soft that they can be readily cut with a knife, almost crushed by the fingers; if on the other hand the lumber is dry, it becomes brittle and if an effort is made to cut it, it breaks up into fibrous fragments, which with a little pressure can be reduced to a powder. All coherence has gone, it can stand no strain and if it is used for construction purposes a collapse is inevitable.

If diseased lumber is placed in water, it rapidly absorbs it and sinks; lumber in this diseased state readily condenses and absorbs moisture from damp air, a peculiarity which assists to spread the

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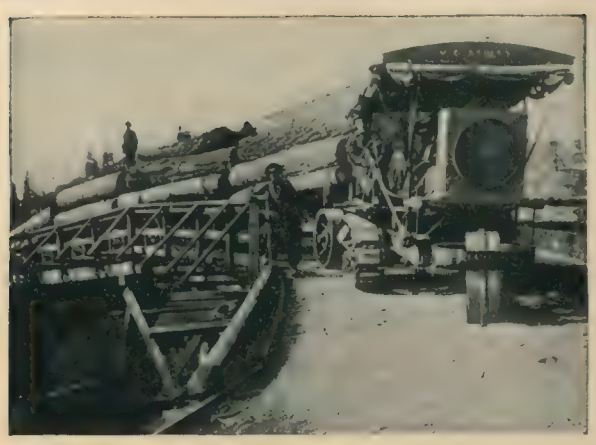

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disease. When a piece of wood attacked by dry rot is carefully examined, the thread-like processes of the fungus constituting the disease can be readily seen. The threads (known as mycelium) are portions of a growth which thrives and fattens on the substance of the wood, and if the wood is examined under the microscope they will be seen to permeate it in all directions, pushing their way both into and between the wood elements, as well as over the whole of the surface.

As the disease spreads and increases, flat cake-like masses of this mycelium are formed, like felt-like sheets, which will attack adjoining lumber. These cake-like masses of "felt" with their innumerable fine filamentous root-like processes in the body of the lumber, form the body of a fungus, which has been named Merulius lacrymans. When the conditions are favorable the fructification develops, a number of shallow depressions form, lined by spore-forming cells. The ridges which separate these depressed areas (called arcolae) have a more or less zig-zag course, running together and sometimes the whole presents a likeness to honey-comb. The spore-bearing layer is often turned downwards and in a moist environment pellucid drops, so-called "tears," distil from it. The spores developed in countless quantities on the areolated surface, which in color may be a golden-brown and in some cases is dull in color.

The peculiarity of exuding drops of clear moisture has given this species of disease the name "lacrymans" (weeping). If the diseased lumber should be in the dark the crystal-like tears hanging from the areolated surface like pendants give an extraordinarily beautiful appearance to it; the substance of the glistening Merulius may then be like shot-velvet, gleaming with bright tints of yellow, orange and even purple.

It is of the utmost importance to know that it has been proved by repeated experiments, carried out with great care by competent observers, that the spores of the fungus disease will germinate on the surface of damp lumber and send their germinal filaments into the substance of the wood and develop with great rapidity. From a minute beginning it rapidly increases in strength by absorbing nourishment from the wood and by so doing destroys it. The spores do not, however, germinate in all cases, certain favorable conditions being necessary before the mycelium can spread in the body of the timber on which a spore has alighted.

By noting these conditions a clue is gained which may enable the spread of the disease to be checked. The fluffy material forming the visible

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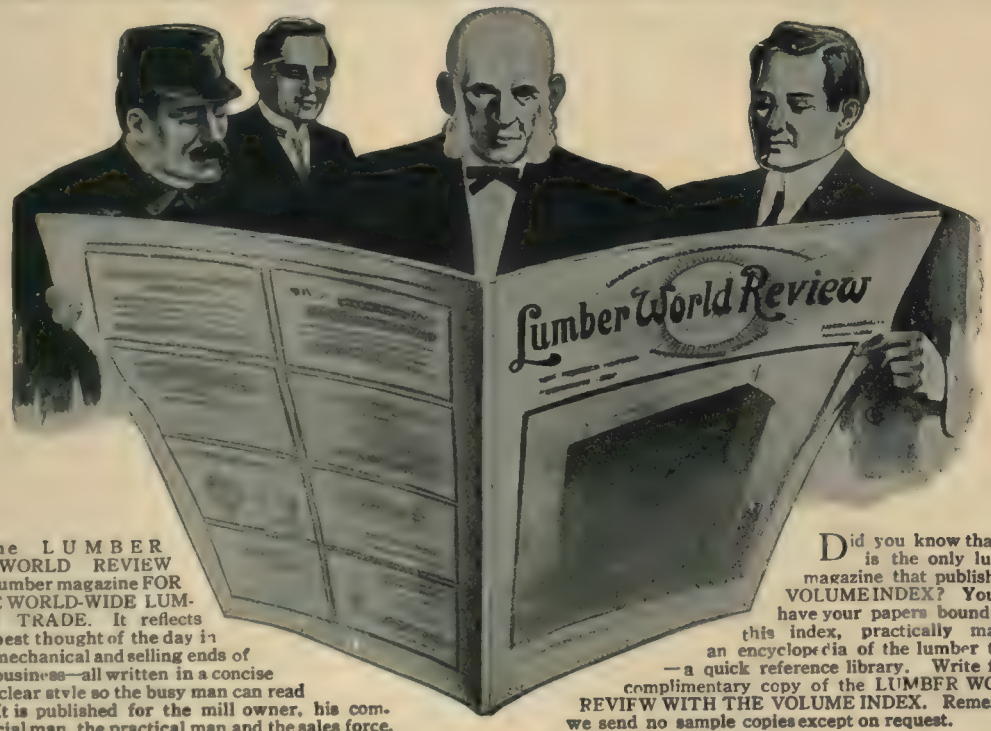

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fungus has a thin surface coating or skin; when this is examined under the microscope it is seen to be formed of innumerable little club-like uprights, packed as close as blades of grass in a field; on the top of each of these little club-like uprights, four spores form. These spores ultimately break away in countless numbers and are wafted away to find a new site and start a new growth. A single spore—quite invisible without the aid of a powerful microscope, suffices, as soon as it alights on a piece of lumber, providing the conditions are favorable; it sends forth a single thread, which attaches itself; then it commences to draw nourishment and to develop. It is essential to note that this special fungus, or disease, contains a large proportion of water in its composition. If a quantity be handled, more than one half of it by weight consists of water, whilst the remainder, say forty per cent or less, is made up of nitrogenous and fatty substances and cellulose, also minute but absolutely essential traces of mineral matters, the chief of which are potassium and phosphorus. The precise proportions in which these substances occur are of more scientific than practical interest and need not be discussed here.

The essential fact is that the fungus obtains them from the healthy lumber attacked, and experts were puzzled as to how it was done. The difficulty was that although the dry rot and its threads could be readily transferred from a piece of diseased lumber to a healthy and sound piece, allowing they both were in a suitable warm, damp still atmosphere, it had been found impossible to induce the spores to germinate.

So recently as 30 years ago it had been ascertained that the spores would not germinate either in water or on damp wood; then two specialists who had devoted much time and study to the subject ascertained almost at the same time what conditions were necessary to make the spores germinate. The essential condition in the case of the dry rot fungus, Merulius lacrymans, is the presence in the healthy wood of an alkali, such as ammonia. That does not occur in healthy wood; it has to be brought from the outside. Dry rot occurs more frequently in buildings, where there is no ventilation or air movement, in cellars and similar situations, where ammoniacal or alkaline emanations from the soil or elsewhere can reach the lumber, thus producing the essential condition, which enables the spores to germinate; the other conditions include warm, still and damp air.

It may be laid down as a good working theory, that dry lumber is immune from the attacks of

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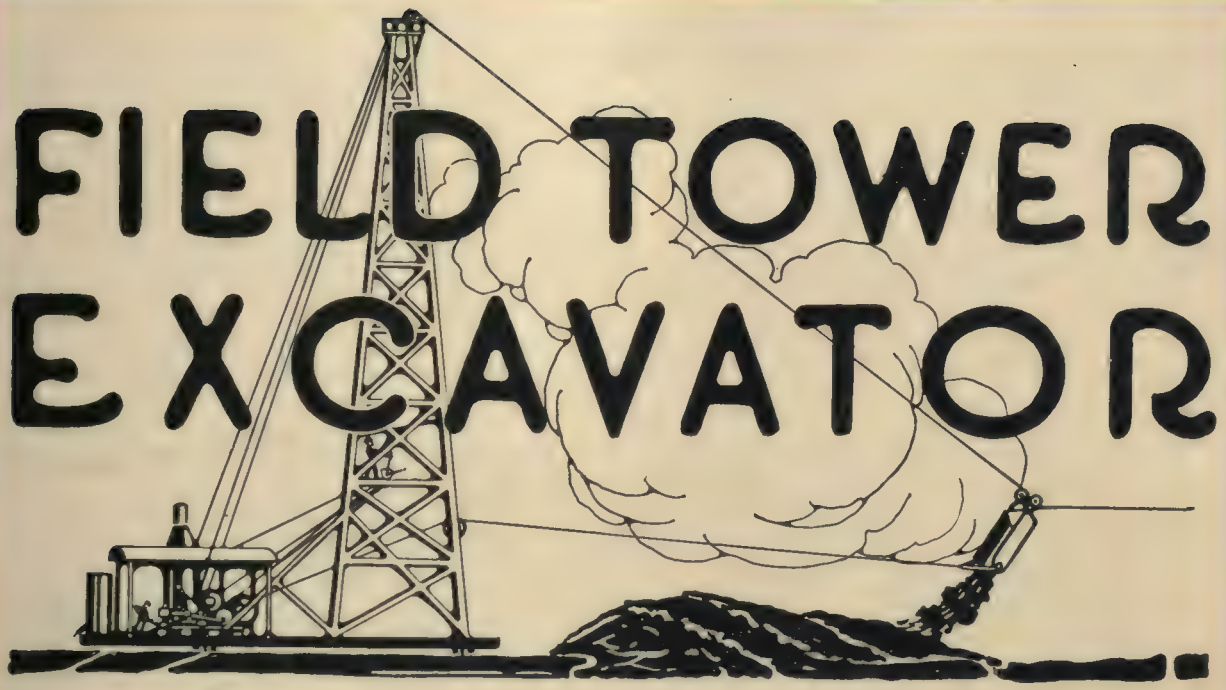

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the dry rot fungus, so long as it remains dry. The fungus is extremely delicate in its infancy; it cannot resist draught, consequently the mycelial threads and even the young fructifications growing on the surface of a piece of lumber in a damp close, situation will be destroyed within 48 hours if exposed to thoroughly dry air, by means of ventilation. But if the growth has obtained a good hold and the threads have worked their way deep into the body of the wood, it is not so easily and effectually destroyed, as it is both more protected and moisture can be obtained from the wood itself.

It should be noted that the threads thrown out by the fungus do not limit themselves to the wood; they may work their way into the soil, or surrounding masonry, and in that way obtain the moisture required. The quality of the lumber is not a factor to be considered, it is entirely a question of conditions; this is an important point, as many persons have expressed the opinion that wood felled in the summer was more susceptible to dry-rot than that felled during the winter. But that is not so, for under the same conditions both summer and winter felled wood suffer alike and decrease in weight to the same extent during the progress of the disease.

Air-dried and thoroughly seasoned lumber is much less easily attacked than damp, fresh cut wood of the same kind, both being exposed to the same conditions. Varieties of lumber are attacked and destroyed in varying degrees. Spruce is far less resistant than the heart-wood of pine.

After the germination of the spore and the commencement of the growth in moist lumber, the medullary rays are attacked to supply food; these portions of the stem contain starch and saccharine matters, nitrogenous substances and inorganic elements, such as potassium, phosphorus, calcium and so on.

It is important to note that the dry rot fungus spreads both by spores, which start new independent growths, and by threads; the latter method enables the disease to spread from one board or beam to another, across intervening masonry or soil; sound wood may thus become involved in the attack. Too much care cannot be bestowed on the removal of diseased lumber, as the spores can be conveyed from point to point in numberless ways by the men engaged on the work; broken pieces of diseased lumber are left lying about, which ought to be effectually destroyed; even the tools employed by the men may convey the disease from one spot to another. Diseased lumber should never be stacked with

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315 S. LaSalle Street CHICAGO, ILL.

fresh-cut; in fact, all diseased lumber should be destroyed.

In buildings when lumber is used for construction purposes, the walls, floors and so on should be thoroughly dry, especially when lumber is laid on or built into brick-work or masonry, it should be aerated and once dry should be kept dry.

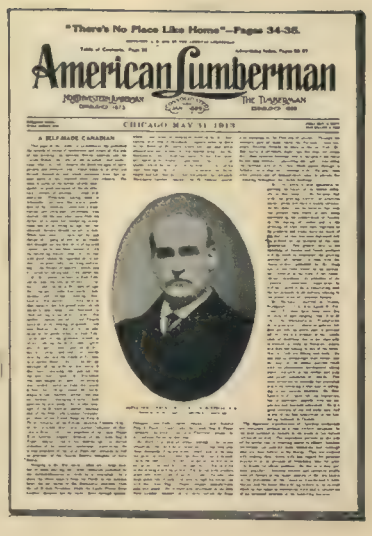
The question may be asked, is there no material or preventive, which will act as an antiseptic and kill the mycelium in lumber in the earlier stages of the disease? Mineral poisons will destroy the threads, so will creosote. It is a peculiarity of this fungus that it is generally found associated with man, in and about his dwellings. Occasionally when lumber has been stacked for some time in the lumber yards, red or brown streaks appear, where the substance of the wood is softer; when passing through the saw mill these streaks of bad wood reduce the value of the boards cut from the logs. This disease arises from a fungus called Ployporus vaporarius. The threads of this growth destroy the wood precisely as dry rot does; but the threads are in the form of thick ribbons and are white in color. The fructification is also different. Timber warps and cracks under the action of this growth and changes its color and when the diseased timber is split open the ribbon-like growth is seen on all surfaces. The white color and the ribbon-like threads enable it to be readily distinguished from dry rot.

This disease is common in forests. The spores may lodge in cracks in barked logs lying on the ground; should these logs get thoroughly soaked the cracks may close up and the spores, the origin of the disease, is embedded in the heart of the wood.

The logs may be decked and kept, in the meantime the fungus is eating up the interior of many of them. When the time comes for sawing them, red and brown streaks appear in the boards and those sawn last may contain large cavities of rotten powdery wood. The progress of this insidious disease is arrested by the timber becoming thoroughly dried.

This disease can make its way into standing timber, entering by any wound or opening in pines and firs. It is said that the threads can work their way into places which have been injured by the bite of an animal.

(To be continued)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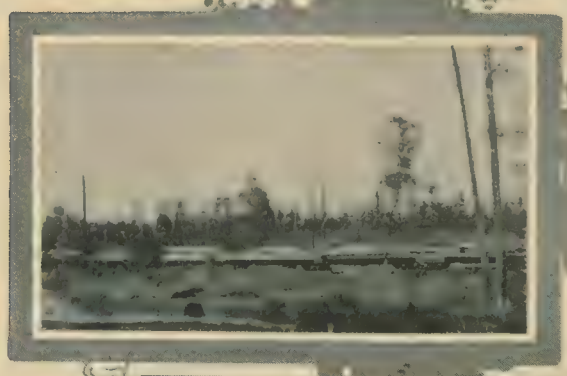

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FIRE and STEAM

Before this world had form and place
We lived among the eddying dust,
Caught in the thrust and counter-thrust
Of fearful orbits flung thru space.

Faster the flying atoms whirled,
Forming in self-created heat
A flaming incandescent sheet
Wherein to wrap a future world.

—How long before the cooling crust
Could close about our fearful strife,
Shutting us in from air and life
To win a foot-hold for *your* dust!

And how we mocked when first you came,
Pale human worms who mouthed and gaped
'Mong murderous mammals, mountain-shaped,
Moving thru scalding mists and flame!

A thousand times we whelmed you deep
'Neath fiery lakes of molten stone,
Searing thru writhing flesh and bone
And calling Chaos out from sleep.

The moving mountains left the land,
The geysers dried, the craters cooled;
And now we walk the earth we ruled,
On suffrance, underneath your hand!

We conquered only thru your fears,
—You grew in courage as in Thought
And prisoned us in valve and port
To spin your flying wheels and gears.

We do not murmur or rebel:—
To use us, you must set us free,
Giving us with our liberty
The knowledge that we served you *well!*

C. HENRY.

The Editor Thinks

A CREW of men working under a full head of steam for half a day will accomplish more than the same crew working at half-power for a full day. Because they will waste less time in overcoming their own inertia.

I saw this illustrated out in the piney woods the other day by a crew of men who had been told they could go hunting in the afternoon if they got their quota of logs before noon. Did they do it?

—They overshot the mark by several thousand feet, every log handled in perfect shape and well and safely loaded. How did they do it?

—By teamwork. Every man throughout the job knew that his own pals would knock his insignificant block off if he didn't do his darndest every minute. And here's the *big* point about the experiment:—every man in the bunch *enjoyed* that morning's smoothly and swiftly running work more than a month of ordinary dragging, drooling, waiting-for-the-whistle.

But who hasn't seen a crew of men working against time to gain some pet project—the defeat of a rival crew, an early knock-off for a special purpose, or some such thing? And who hasn't been struck by the happy, good-humored way they went about their work, working all together and each to his limit, yet finding a little supurfluous energy to extend in gentle joshing of one another—and of the rival crew if within hailing distance?

Tell you what, people; come to consider it carefully and we find that it *always* happens just that way. The fellow who enjoys his work is the man who works at it as if he enjoyed it, who takes pride in doing it as swiftly and as well as in him lies power to do.

Your doddering timekiller has a heleva time through life when you bring the right focus to bear on him. He spends nearly half his life going to, at, or coming from his daily task, and two-thirds of all the balance in bed. If then, he shirks his job and hates it, keeping both eyes eternally upon the clock, he is living just one-sixth part of a life—and even that part such a man is sure to waste in loafing trivialties of no real benefit to himself or the rest of the race.

The man who takes his daily task as a long slavery leading up to a few hours of license is swindling himself out of all his real-joy-in-life and slowly suiciding at the same time.

This last because Nature always takes away from her children what they misuse or do not use at all.

Get happy in your work, friend, or get work you can find happiness in.

—The man who dedicates himself to a life of hateful toil is no hero but a fool both from his own standpoint and from that of Nature. Nature wants her work done well or done over—that's why progress is so slow.

Even the willing worker will slip now and again and spoil his work; but he places the blame as he creates the praise and so goes back over it cheerfully, knowing that, after all, it is *his* work, his very own.

The unwilling worker, on the other hand, works only under the lash of stern necessity; thereby admitting himself to be a Slave and not a Man.

IT IS TOO BAD that we have done away with devils, for how they would enjoy to see men fall to fighting in this, the Age of Organized Industry.

Now that we have nailed to the standard of Service our flag blazoned with the three white plumes of triple purity in body, mind and soul, underwritten with the simple screed "I Serve!", it seems hardly fitting that we should serve each other with scars or sudden death.

But perhaps we truly serve when we send our brothers suddenly out of a world which we have rendered hateful with our envy and our greed.

THE MENACE IN POPULAR education does not consist in over-educating but in half-educating.

There is no fool so dangerous to the commonweal as the half educated fool raised from the self-distrust of ignorance to possessing a little power of knowledge, insufficient to control and direct its use.

Such a man is only too apt to turn his little power entirely to self-seeking, while the disease of self-sufficiency is almost certain to fasten upon his mind.

Men should have instilled in them the reasons for and the limitations of knowledge as the power itself is placed in their hands.

They should learn that education is positively harmful, both to its possessor and to the people, unless it be accepted as the process of putting a keener edge on a tool to be used by Nature in the better fashioning of all our human kind.

Our schools sharpen daggers as well as chisels, and often even the chisels are used as daggers because their owners do not understand their true purpose and value.

Whoever harms another, harms himself more; whoever helps another, helps himself more.

—It would seem simple enough, logical, and easy to understand; but it took men five thousand years to formulate it and they have spent another two thousand in thinking it over. Fortunately, the indications are that they will shortly begin to *live* what they have learned.

EVERY MOMENT OF A MAN'S time is his own, whoever he works for.—Get that through into your thought-tank, Mr. Timeserver!

Life is all a matter of learning how to work and then how to work better.

All our eating and sleeping and reading and exercising is aimed to this one end—that we may do our work better every day.

When we can no longer work we must rest; and unless we have recuperative power, the power to "come back," it will be a long, long rest.

Your life does not consist in the handful of leisure moments you snatch from Necessity, nor does it lie among the violet hours you spend with Death's foster-sister, Sleep.

A man lives insomuch as he does the work of the world, and if he will not work bravely and well, he may rob others of some trifling profit from his labor but he will rob himself of infinitely more—of his very life.

WE WHO WORK FOR DAILY wages *must* work well if we would hope to win any of the great prizes of life.

A million successful men are made by Labor where one stumbles upon fortune through blind luck—fortune which will

almost inevitably destroy him because he has not learned how to use it.

Whoever works unwillingly and waits on Chance will find Fate instead; for it is the property of Fate to be found by cowards. Brave men carve out their own destinies.

Chance comes seldom to the coward, but when she comes she bears a bag of gold in one hand and a vial of slow poison—the infallible poison of unmerited success—in the other.

There is human justice for the man who does not get what he has earned, but there is a higher justice for the man who gets what he has not earned—the justice of natural law.

Under this Law he is like a child finding a fulminate-filled cap when he finds or steals his fortune instead of earning it:—attempting to use it as a plaything, it will maim or destroy him as it vanishes.

The only wealth worth-while comes as the result of good work well done and by far the greater part of such wealth cannot be added on a Burrough's with the dollar sign on the left.

NATURE NEVER EXPLAINS or apologizes. She creates a mountain or a molehill and, leaving it there whether you like it or not, goes on about her business.

From that time onward the mountain and the molehill have their place in creation, nor all your criticism shall do more than beat the empty air about them.

That which is created is created; thought or thing, man or mode, it takes its place among the absolute and irrevocable though its existence lasts no longer than a lightning flash.

The critic may create criticism, but he cannot uncreate creation, nor shall his criticism last any longer than its true and utter value. For this is the supreme conservation of Nature, that nothing which was ever is lost and that nothing shall receive more than its deserts in time and place and in eternity.

Man may mock at natural laws, but in the end they will crush him or reconcile him to themselves, for they alone are absolute and irrevocable.

Man is only a vast sea of possibilities, to be distilled according to law or to be left for another.

There is no middle course, for the creature may not bargain with the Creator. Live by the law or die by it. This is the unquestionable demand of Nature, from which there may be no deviation because it is herself—formed as the governing plan in a destiny greater than herself.

LABOR HAS ALWAYS BEEN and will always be the price of Life. The more a man labors the more he lives, the less he labors the less he lives.

The smallest amount of labor Nature will accept in return for the gift of life is the assimilation of air, light and food and the rejection of impurities.

This is the price paid by plants and trees, by the lower orders of the animal kingdom and by the idle sons of rich men, except that the later do not reject all impurities and so die sooner than they might but no sooner than they should.

Effort is always circumscribed by energy and energy is the growth of effort. Whoever has great energy and uses it shall gain more; whoever has little and neglects to use that little shall lose even that which he has.

When it Comes to Costs:-

Wolfe wins in a walk for the J. J. White Co. of Columbia, Mississippi.

He is the Champion Heavy-Weight Costcutter according to S.L.A. Dope

FIRST of all we want the fact established that this is strictly a staff story, which means that it is a collection of FACTS, blended secundem artem, wind and weather permitting.

What is a staff story?—A story written by a member of the staff, of course.

Who is a member of the staff of STEAM MACHINERY?—S. MacHinery is a member of the staff of said paper. Ergo, S. MacHinery perpetrated this story. Q. E. D.

One fine afternoon in the kalends of September, the bunch got together in the lobby of the Grunewald Hostelry and persuaded the hostlers to take them up to the twelfth floor.

Arrived thereon, it was an easy matter to find seats and for President Baker to say: "How much does it cost you yellowpiners to log, anyhow?"

Then arose one who quoted three dollars and six and two sevenths cents as his total cost from standing tree to stagnant pond.

Another said three dollars and four cents, another three flat; several claimed two-seventy-five and even more two-fifty.

Then arose one W. W. Wolfe, logging superintendent for the J. J. White Lumber Co. of Columbia, Miss., armed tooth and nail with documentary evidence to prove that his average costs from February first nineteen-thirteen to September first of the same year had been two dollars thirty-two and one-half cents, including all real and imaginary expenses.

Whereupon the bunch, including S. MacHinery, who happened to be present, fell into a deep swoon from which they were subsequently revived by the judicious application of ice-water to the afflicted parts.

S. MacHinery is one of these deep thinkers who very seldom say anything not contained in an unabridged Webster, so, without confiding in anyone, he laid a deep plot and filed it away in the refrigerator for future reference, cackling the while.

We will now un-plot the plot, which was nothing less than to creep upon the said Wolfe-person in his own lair and see how he did it when he wasn't expecting visitors.

And did he do it?—Candor compels us to admit that he did, with a plusage!

Columbia, Miss. is a charming little town with a fine courthouse, a jovial jail, and a Main Street almost half a look long. S. MacHinery put up at a little hotel right across from the jail, since the latter vehicle was entirely occupied by desperate criminals.

Bright and early next morning he sallied forth (Why do people always Sally forth?—Wouldn't it be a good plan to Jenny forth or even Eva forth or July forth once in awhile for a change?—but we digress!) to visit the tall and stately mill of the J. J. White Lumber Co. which loomed through the morning mists like a Brahma hen in a flock of chicks.

Arrived at the office, it was necessary to enquire for the officers, who were rendered conspicuous for their active absence.

"You'll find 'em all over beside the Mill," responded the inquiree, "One of our artesian wells has a severe attack of sand-in-the-throat this morning, and they are-teasin' it with a few hundred feet of fire hose to make it cough up!"

Passing the fearful pun as a necessary complement to the desired information, S. MacHinery strode over to the designated spot to meet Mr. Hugh White, President of the company.

Did he meet him?—He did not.

Mr. Hugh White was altogether too much wropped up in wells, firehose, humidity and such to be successfully met at that time.

Waving a lavish hand in the general direction of our star reporter after said star had announced his vocation, he cried "Back to the Woods!" or words to that general effect.

Whereupon Mr. J. J. White, secretary and treasurer of the company, took charge promptly and efficiently.

It took him ten minutes at the outside reckoning to display the hundred twenty-five thousand mill. (By the way, he assured S. Mac that the true rated capacity of said mill was ninety or a hundred thousand. However they get a twenty-five per cent overrun at THAT mill.)

Here they have one humdinger of a circular for sawing dimension and export stuff, and a gang which bites a log into a dozen or so of inch boards at a bite.

This, and the sound of chain-carriers, together with the view of a distant but super-modern-looking planing mill, was all

Mill and Pond of J. J. White Lumber Company

MacHinery could gather into his thought tank before he found himself being introduced to Mr. T. B. Wilkinson, main-line engineer, who kindly relinquished the fireman's seat to him during the thirteen mile run out to the woods. The fireman was busy anyhow.

Who is this, coming to meet S. MacHinery and the log-train (chiefly the latter) on the crest of Hub Hill? Ha, it is he!—can't fool S. MacHinery after the perfectly good job Nature made of him, and so, leaping lightly from the speeding loco, he grasped the hand and spoke the name of W. W. WOLFE, champion heavy-weight cost-cutter of the yellow pine belt.

"Hello Mac," said Mr. Wolfe, "Come and have a bottle of ice-cold dope!"—thus simply do two great men meet—and drink! (Editorial Query: Who in Hades was there besides Mr. Wolfe? S. MacHinery's reply: I. Editorial Note: This is almost too humorous to mention.)

Well, anyhow, MacHinery had the dope and shortly found himself out in the piney woods looking over some of the finest timber in the whole doggone world, barring no place he has ever been including even the pine barrens at the mouth of the St. Croix.

This statement we support with the photograph appearing on page 34 which for the nonce, we may label Exhibit 1.

The very next thing to catch his eye was evidence of the felling hand of Vic Langley of the Wausau-Southern.

Here were the low-cut stumps which are said Vic's pride and joy!—Cut just a shade higher than his, true, but everyone taken just above the swell, utilizing all the merchantable timber and leaving a perfect curved-face to confront any incoming log which might happen to skid into—and off—them.

Wolfe runs ten saws and pays his twenty sawyers by the day and so never has any trouble in getting his stumps down to the proper height; besides which he has cut that way ever since he got his skidder, having visited the Wausau-Southern operation at Laurel before commencing steam skidding.

And now, after surmounting a little rise, S. MacHinery came to the right arm of the operation—a four-line, double-end Clyde skidder, made of iron and steel entirely—not a piece of wood having entered into its construction (except, perhaps in the friction blocks.)

Running three lines with the other held in reserve, Wolfe gets one hundred twenty five thousand feet a day right along with this machine, despite a famine in re-haul mules. He has only five of these reptiles to handle all three lines and in consequence has to be considerate of them, allowing them to run on low gear the greater part of the time.

Wolfe has maintained this daily average ever since the first of February, 'thirteen, without a single mule having committed suicide through overwork.

D. M. Miller, his able and efficient skidder foreman, employs a crew of sixteen men about the machine and is to be congratulated upon the high state of efficiency to which he has brought them.

Logs average about two hundred fifty feet apiece, five hundred such logs being required each day. They are all cut double-length, from 24 to 50 feet, being resawed at the mill.

At the time of S. MacHinery's visit, the skidder was some half-million feet ahead of the loader, while Wolfe assured him that a further surplus of two million feet would be found at the mill.

"When it comes to costs"

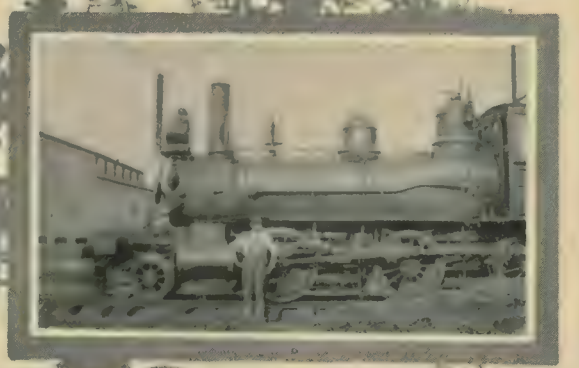
Camp & Railroad Scenes on summit of Hub's Hill

Commissary & Dining Cars on Hub Hill

General view of Camps on Hub Hill

"The Wolfe's Lair"
W.W. Wolfe's Movable Bungalow on Hub Hill

One of the Two Spur Locomotives



Main Line Locomotive and T.B. Wilkinson Engineer

Wolfe's Four-line Clyde Skidder

There hasn't been a breakdown on this skidder to cause ten minutes delay since it first started to work in February, 1913, which is eloquent testimony to the strength of the machine, the efficiency of the crew and the careful oversight of Wolfe.

Wolfe says that the only way. when some little thing goes wrong about a skidder, is to stop and fix it *then* without waiting till knocking-off time by which time a little trouble may have multiplied into a catastrophy.

There are no Y. M. C. A.'s scattered around Wolfe's camp promiscuously, but he gets the same effect by insisting on his men always being efficient-plus.

Local option prevails on top of Hub Hill—where Wolfe's camps and woods are located—but W. W. Wolfe carries the option.

If a savage snake should happen to bite you on the wrist while working for Wolfe, you would probably have to crawl away and die decently and unostentatiously. It's a cinch you couldn't find any snake-bite-fluid on the job.

And this is good race-horse-sense because, as Wolfe epigrammatically remarked: "When the booze goes into the belly the bounce goes out of the brain!"—and few men need a clear brain with the power of quick decision and quick action insured by it more than a modern logger.

But now to return to the skidder:

The average distance to which they go after logs is eight hundred feet, seldom exceeding a thousand. They move the machine about 150 feet at a set except in scattered timber, the plan being to bring the rear of the tank up level with the front of the last log deck.

Wolfe swears by Hercules rope, using it throughout his operation. He uses 5/8" for skidding, 5/8" decking and 7/8" guys.

He has a hundred million feet of timber ahead of him on Hub Hill averaging ten thousand five hundred feet to the acre.

This will last him about three years, after which he will move into a new belt some five miles north of his present location, where a further three hundred fifty million feet await his arrival.

Ready to Rehaul

The country is decidedly rolling but is remarkably free from underbrush. The timber-growth is ideal, some of the logs S. MacHinery noticed contained more than a thousand feet of faultless yellow pine.

The camp is separated from the mill by some thirteen miles of railroad (and country) which gives Wolfe an excellent excuse to use three locomotives and thirty log-cars. Twenty of these last put the period to perfection, the other ten may burn up some day anyhow.

Wolfe has been with the J. J. White Lumber Co. for four years and was formerly with the Great Southern at Bogalusa. He claims the distinction of having put the first log in Bogalusa pond.

Altogether he has used four different types of skidders, but he emphatically declares that he wouldn't trade his present machine for the whole bunch!

Wolfe has a surprisingly simple and effective system of cost-keeping for camp, woods and road.

The whole thing is comprised in two lil sheets—a Daily Cost Sheet and a Daily Labor Report.

With these two forms he is able to lay his thought-finger in a moment on any cost-subdivision he may wish to check.

A supply of these forms were admitted as evidence during the Steam Skidding Symposium of the S. L. A. at New Orleans, and were thus directly responsible for his acquisition of the cost-cutting championship yellow-pine Belt.

In summing up the reasons for the all-round efficiency of his operation we find the following:

First: the fact that Nature has been very kind to him in the selection of his timber.

Second: the practice of low-cutting stumps, doing away with skidder hang-ups and breakages.

Third: the fact that he has equipped himself with the most efficient machinery for skidding.

And last, but by no means least, the splendidly-efficient crew by whom the destiny of said machinery is controlled.

To all who have become envious during the perusal of these paragraphs, we can only suggest—go thou and do likewise!

(In which we get the Company's G O A T.)

The Touching Tale *of* Tiger Pete

Now Tiger Pete of Howling Gulch,
A contumacious card,
Rode down one day to Sim's Saloon
To hit the licker hard.

He hit it hard, and harder still
Back on his bean it gat:
But who would quit the Demon for
A little thing like that?

—Not Tiger Pete of Howling Gulch,
Bright pink were his insides
"I'm on the Downward Path!" he yelped
"And this is where I slides!"

He slid about a million miles
On half-a-peck of kale,
Until at length, all spraddled out,
He toppled on his tail!

"Bold Buttercups and Isinglass!"
He murmured where he sat,
"Just lead me to the narsty gink
Who treated me like that!"

A spongy silence, wet and cold,
Hung all about the room,
And no one volunteered to lead
The deeder to his doom.

But Tiger Pete, with smoking eyes,
Rose slowly on his feet,
A forty-eight in either hand,
And cried for human meat.

Ere Tiger Pete could help himself
To juicy steak and raw,
Sim's little daughter Sue came in
And chased him thru the door.

She chased him up, she chased him down
She chased him quite awhile
He beat her at the quarter, but
She had him at the mile.

She filled him full of aching holes
And hung him out to dry
While nine and twenty buzzards came
A'driftin' down the sky.

The moral of my simple tale
Is:—'Ware of wine and war,
But ah, my young and trusting friend,
Beware of *Women* more!

C. HENRY

Mt. Elliot Avenue Trunk Sewer

Section No. 1

Section Near Outlet

Excavator on Open Cut

Construction of Mt. Elliot Avenue Trunk Sewer

Section No 1 Detroit, Mich.

Decribed for "STEAM MACHINERY" by C. MacHinery Jr.

OWING to the rapid growth of the outlying districts the City of Detroit, it has been necessary to make extensive additions to the general sewerage system of the City. Accordingly two trunk sewers have been designed and both are in the course of construction. One of these is about five (5) miles in length and extends from the River in a northerly direction to the City Limits, and is known as the Morrell Street Sewer. It has its outlet at the foot of Morrell Street which is about three miles west of the business center of this City. The other is known as the Mt. Elliott Avenue sewer and extends in a northeasterly direction from the foot of Mt. Elliott Avenue to the City Limits, the outlet being about two miles east of the business center of the City.

A large trunk sewer extends north on Woodward Avenue and has been in use for some years. This is taking care of the central portion of the City, and when the Morrell Street and Mt. Elliott Avenue systems have been completed a large portion of the City will have ample outlet for its sewerage. All of the contracts for the Morrell Street Sewer have been let and the work is at present approaching completion. Sections No. 1 and No. 2 of the Mt. Elliott Avenue sewer were let last May. Section No. 2 is nine (9) ft. in diameter, three ring brick, and will probably be entirely constructed in tunnel. Section No. 1 is the outlet section and is 3364 ft. in length and made up of three different types of cross section in addition to the bell mouth, namely, 2,663 lineal feet of three ring brick cylinder, 9 ft. inside diameter, 338 ft. of four barrel two ring brick, each barrel being five ft. inside diameter; 333 ft. of four barrel, the four barrels lying in a rectangular renforced concrete section 6 ft. 8 inches deep and 24 ft. 8 inches wide, each barrel is lined with one ring of brick and is five ft. inside diameter. There is in addition a bell mouth connection for the 9 ft. cylinder to the four barrel section which is 30 ft. in length.

Shaft No. 1

The principal reason for changing from the 9 ft. cylinder to the 4 barrel section was in order to reduce the vertical height and keep the lower end of the sewer under the grade line of the street. The outlet end, 333 feet in length, extends into the river to the harbor line. This section rests on a piling foundation. The piling are driven with a scow driver and are cut off with a swing saw to sub grade, which is about three feet six inches below the surface of the water. There are five rows of piling, 5 ft. 11 inches center to center along the length of the sewer, and each row is capped with 12 by 12 timbers which are fastened to the piling with 1 inch draft bolts. On top of the caps there is laid a floor of timber six inches thick, 12 inches wide and 26 feet long. These timbers are tongue and grooved and the concrete section rests on this flooring.

A row of 6 by 12 inch Wakefield sheeting is driven inside of the outside row of piling before the flooring is placed. This sheeting is for the purpose of holding the clay fill, which is made up to the level of the floor, and which gives additional stability to the structure to withstand current and ice pressure which is likely to come against it.

Work on Section No. 1 was started June 16 at Shaft No. 1 which is situated 50 feet off Jefferson Ave. on Meldrum Avenue, and a drift was run each way from this shaft. At the present date 800 feet of tunnel has been completed in the south heading and about 700 feet in the north heading. The work is carried on in two shifts, the day shift mines in each heading, and the masons work on the night shift and brick in what has been driven during the day.

Shaft No. 1 is equipped with an automatic electric hoist and elevator. The excavated material is hoisted to a platform above the street level and dumped into wagons. Small industrial cars of about ½ yard capacity are used to handle all materials. Brick and sand are

loaded on to cars which run on a track at the street level and are lowered into the tunnel on the elevator. The shaft is also equipped with an electric driven centrifugal pump manufactured by the Kerr Machinery Co. This pump is self containing, and is driven by a vertical motor which is directly connected with the pump. The motor and pump are encased in a frame and the entire unit is lowered into the sump. The motor is water proof and protected in an iron shield. The impeller on the pump is so designed that it will not overload the motor under low heads. The power used to drive the hoist and pump is secured from the local lighting company and is 3 phase 60 cycle 220 volt. All of the four barrel work and about 600 feet of the 9 ft. cylinder adjoining the bell mouth will be built in open cut. Work was started at the river and at the present time most of the four barrel two ring work is in place and the bell mouth has been built and work is being carried on on the 9 ft. cylinder section in open cut. A traveling derrick equipped with a 1 yard Owen Clam Shell bucket is used to excavate the trench. This derrick is of all steel construction and carries a 40 ft. boom. A standard Clyde hoist 8¼ by 10 three drum with swinger furnishes the power for the derrick. One of the niggerheads on the hoist has been removed and a jaw clutch placed on the extended shaft which operates a traveling mechanism. The engine is of the Link Reversing type and by reversing it the derrick travels either backward or forward under its own power, The derrick was designed by Mr. R. M. Gates of the C. O. Bartlett & Snow Co. and was built by that concern.

South Heading—Shaft No. 1

There is also on the work a pile driver equipped with a 6¼ by 8 inch link reversing Clyde engine which is to be used in driving the sheet piling.

Mr. Robert H. McCormick is Chief Engineer for the City of Detroit, and this improvement was designed and is being carried out under his suprevision. Mr. William L. Day is engineer in charge of the field work. The contract for Section No. 1 was let to the John T. Walbridge Engineering Co., and Mr. John E. Rowe is superintendent for the contractors.

An Irish Answer

A wise D. S. (You win your guess!)
Went out to make Inspection.
Each section-boss he came across
Went with him thru his section.

Now on the way was Section K
Whose boss had just erected
A hand-car shed, all new and red,
Which same the Supe. inspected.

"Now what the deuce!"—Can you produce
My Orders for Construction?"
The Super. cried, but Pat replied
"Och now, don't raise a ruction!"

"That's nothin' new—I'm spakin' thrue—
I'd niver be so darin'!
'Tis jist the shed we've always hed
Th' byes hev' been repairin'!"

Looking around, the Super. found
A pile of ancient lumber:
"Ah, ha!" he cried "The villian lied
And I have got his number!"

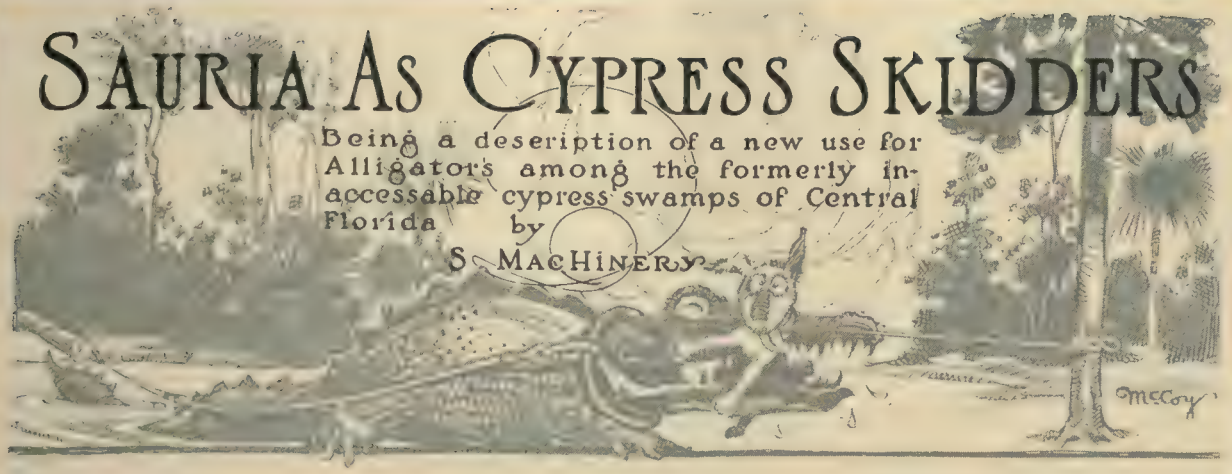
"Now tell, Pat, how much of that
Was used in your creation?"
"Begorry, sor!" the foreman swore,
"*Oi used the owld location!*"

C. HENRY

Sauria As Cypress Skidders

Being a deseription of a new use for Alligators among the formerly inaccessable cypress swamps of Central Florida by

S. MacHinery



WHEREVER man encounters a natural obstacle in the path of his material progress, he will most often find a natural solution in the immediate vicinity.

Thus, beside the brawling mountain torrent nature has planted the timely tree which may readily be felled and converted into bridge or boat.

Beside the coy and unfriendly oyster she places the opportune rock with which to knock until said bivalve opens.

Beside the succulent cocoanut growing among the topmost fronds of the tropical palm she plants the choleric monkey who can readily be induced to use it as a missle, to the subsequent nourishment of whoever dodges in time.

And beside the mighty cypress of Florida, among the dark, dank, inaccessable swamps, she provides the strong and slithy alligator to be used as a self-propelling skidder.

This last wise provision of beneficient Nature is the especial subject of our article, having been brought to our particular attention during a recent visit to the Floridian swamps aforementioned.

A few short years ago, the cypress-men of the Southernmost State were filled with unavailing pessimism at the contemplation of millions of feet of covetable cypress going to waste for want of some means to get it out.

Mile upon mile, the slimy swamp extended upon every side, defying the approach of any save amphibians.

Early in the fall of 1913, however, the inventive mind of one S. MacHinery became bent upon this abtruse and altruistic problem, with the result that it is now *solved* for all men and time.

The attention of our energetic reporter was drawn, early in his visit of inspection, to the vast hordes of alligators with which these swamps are infested.

The clamor of their strange and unmelodious voices when, at the approach of evenfall, they sought refuge among the upper branches of the towering cypress, made it almost impossible to overlook them as a prospective solution of the problem with which he found himself confronted.

"Here" he soliloquized to himself, seated in a wild and untamed motor-boat somewhere among the upper reaches of the St. John, "Here we have a ponderous and powerful reptile placed by Providence in prolific profusion just where some such engine is needed to transport the logs of this otherwise inaccessable cypress. Let us see if we cannot put the one and the other together!"

Following this line of reasoning, he proceeded to manufacture a supply of special alligator harness to be slipt over the neck of the potential skidder, with crotch-lines leading from either side to a serviceable choker-line terminating in a wrought-steel hook.

So far, good!—But the next question of placing this harness in position on a morose and savage saurian gave our reporter many hours of painful consideration.

Finally, in a moment of what can be termed nothing less than inspiration, the solution of this problem also came to him.

It is a matter of common knowledge that all creatures of sluggish circulation have their condition of general apathy and ennui raised to the Nth power directly after a heavy meal. This trait is peculiarly noticeable in snakes, clubmen, alligators and millionaires.

The obvious preliminary to the successful and safe harnessment of an alligator, therefore, was first to supply it with a plentiful meal and then to let nature take her course.

Having worked out the solution theoretically, our reporter next proceeded to put it into execution.

Next morning, before the horde of alligators had descended from their nests in the trees, he rounded up a herd of wild hogs (with which this state is amply provided) and drove them into the swamp, prevailing on them to remain under the trees containing alligatornests by sprinkling a plentiful supply of corn about the roots.

The grunting of these porcine prowlers naturally aroused the saurian horde at an earlier hour than usual, and, descending from their arborial abodes as one alligator, they rushed with inconceivable voracity upon this providential breakfast and devoured it.

Needless to say, our reporter had already departed to a place of safety.

Their meal disposed of, the alligators showed some disposition to go back to bed, but the physical exertion entailed in the task of once again ascending the

trees prevailed upon them to remain upon terra firma where they soon fell into a state of contemplative coma.

It was then safe and simple for our reporter to return and place his harness over the neck of each sleeping saurian, leaving everything in readiness for the next step in this novel and intelligent logging operation.

Leading a gang of flat-heads equipped with diving-costumes into the swamp, he instructed them to proceed with felling the cypress and bucking it into logs, while he went on a tour of investigation to discover a good banking-ground to which the timber might be skidded.

He finally decided upon an open stretch of grass-land lying beside a branch of the St. John in which the water was of sufficient depth to float a fair-sized raft of logs, and here he proceeded with another part of his plan.

Taking a small, white puppy from his pocket, where he had thoughtfully placed it before commencing his journey, he secured it by a length of twine to a stake driven into the ground at the water's edge.

Meanwhile, the sawyers having completed their tasks by placing the choker-lines attached to the alligator-harness in position around the logs, and the saurians showing some symptoms of returning interest in the sights and sounds of nature, the stage was all set for the concluding act.

Awaiting only the return of his sawyers to the proposed banking-ground, our reporter carefully applied a pair of pincers to the caudal appendage of his tethered puppy in such a manner as to produce the maximum of vocal protest with the minimum of physical suffering.

High and clear the wails of the complaining puppy rose above the sloshy silence of the swamp, and at the sound a hundred recumbent alligators raised their horny heads and snuffed the air expectantly.

Applied a pair of pincers.

Urged by reawakened appetite, each slithy saurian set out in the direction of the inviting sound, recking nothing of the thousand-odd feet of cypress which clung affectionately to his rear elevation.

In surprisingly short time, the entire horde appeared at the edge of the river, each with a splendid cypress log in his train, and each determined to claim the now-silent puppy for his first course.

The entrance of the flock of alligators upon the scene was a signal for the departure of our reporter and his crew, which was cleverly effected in a motor-launch which had been brought up and concealed under the bank.

From a safe position in mid-stream they watched, not without regret, the untimely decease of their decoy: and then it was that our reporter realized that his plan had not yet been perfected.

One small puppy was, of course entirely insufficient to send a hundred alligators into a condition of digestive coma. In consequence after the lucky and speedy winner had made his repast, the entire remainder of the herd turned in contemptuous disgust and retraced its several ways into the recesses of the swamp, still dragging the cypress after it!

The oversight, of course, consisted in not having a second supply of wild hogs awaiting the arrival of the alligator-army, and our reporter has promised to remedy this at his next attempt.

Aside from this however, all who were privileged to witness the remarkable experiment pronounced it a prodigious success, and showered praises upon our versatile and energetic reporter for his inventive resourcefulness.

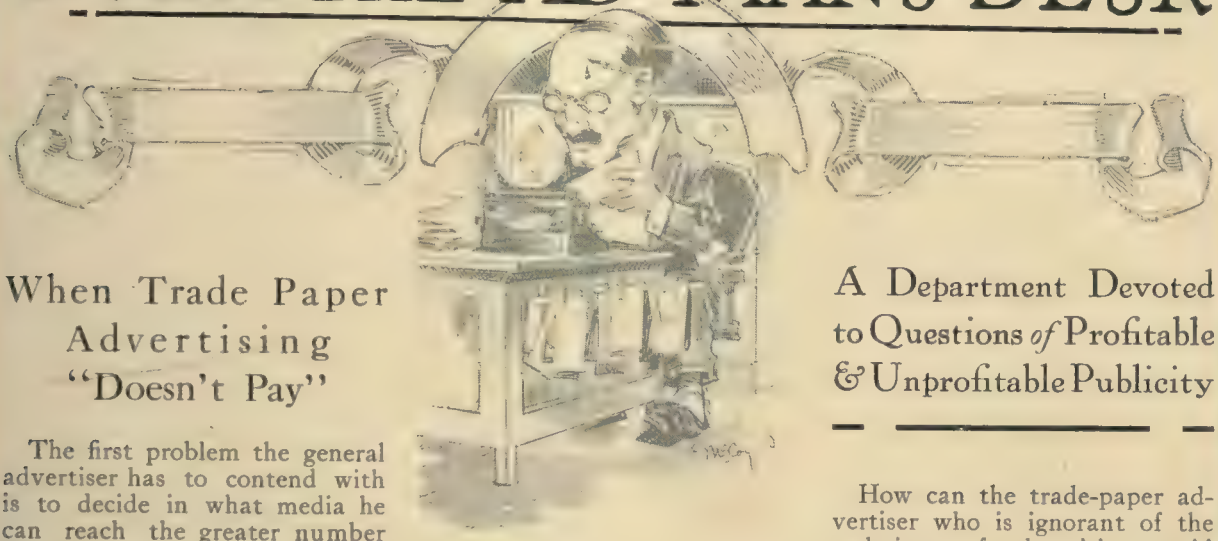
Although the second experiment has not yet been made, we feel safe in announcing to our readers that the work of reclaiming this splendid stand of swamp-cypress will go forward steadily from this time on; pointing to the accomplishment with modest pride as an achievement of our own special representative.

S. MacHinery

SUCCESS is the habit of continually earning more than you are paid since the only way to get a bigger job is to over-fill the one you have.

C. HENRY

OVER THE AD-MAN'S DESK



When Trade Paper Advertising "Doesn't Pay"

The first problem the general advertiser has to contend with is to decide in what media he can reach the greater number of his prospects at the best time in the best way at the lowest cost.

Next he must decide to what class of his prospects each medium goes and calculate his advertising appeals accordingly.

The trade-paper advertiser is relieved of most of the above by reason of the specialized appeal of his product.

He wishes to reach those engaged in a certain industry. This he can do only thru the trade-press of that industry; all he has to decide is which representatives of that trade press will give him the best publicity value for his advertising dollars.

The appeal of his product will be practically universal thruout his special field and he does not therefore require special copy for each medium.

When trade-paper advertising doesn't pay then, it implies one of two things.

Either the media in which the appeal is appearing do not reach a sufficient number of prospects in such a manner as to receive their attention, or the copy itself is weak in attention-compelling value or in its follow-up arguments.

It sometimes happens, of course, that the advertiser is at fault in both of the above and is using weak copy in weak media—in which event his chances for profitable results are minus nix!

But in every case the fault is easily found and is remediable.

Trade-paper advertising offers the most lucrative possibilities of any advertising field to-day.

It has less waste circulation, less opportunity for mistaken appeal, and costs less per prospect to cover.

Because its possibilities are so great they have never been intensively cultivated except by a few progressive firms who have learned the lesson of profitable publicity in other fields.

As a general thing the trade paper advertisement is a crime against Nature, against the advertiser, against the publisher of the paper in which it appears and against the entire subscription list of the paper.

It is a crime against Nature because it entirely disregards her laws of mass and balance.

It is a crime against the advertiser because it converts a wonderful opportunity into an absolute waste of capital.

It is a crime against the publisher because it makes a beggar out of a business-man, driving him to ask as a favor what he should be able to demand on the basis of service rendered.

It is a crime against the reader because he *must* take it with his paper—pages upon pages of hideous alleged advertising, adding to the weight but not to the worth or wisdom of a message which he must have. He *pays* for information and *gets* 66% slush!

A Department Devoted to Questions *of* Profitable & Unprofitable Publicity

How can the trade-paper advertiser who is ignorant of the technique of advertising avoid committing this four-fold crime?—By the liberal admixture of common sense with his copy.

For let us consider:

Here is a manufacturer sending out salesmen, bulletins and salesletters in a constant and costly stream to call upon his prospects in a certain industry.

Does he instruct his salesmen to stick their heads in at the prospect's door, shout "Blank & Co., Thirty Million Feet of Yellow Pine a Year!" and then depart, dodging ink-pots?

Does he send out sales letters reading thuswise:

Dear Sir:

John Jones & Co., manufacturers of yellow pine lumber, five mills. Head Office at Blankton.

Yours very truly?

Why, he most certainly does not!

His salesmen, bulletins and letters get right down to brass-tacks and talk to the prospect about things he is or should and will be interested in.

Yet here we have a trade-paper, calling regularly every week on say five thousand of the more progressive people thruout our hypothetical manufacturer's chosen field.

It is a *good* trade-paper and serves its field well, telling its subscribers things they want to and must know about market conditions, selling plans, new methods and new machines, and the thousand things that hap-

pen overweek in a big progressive industry.

Our manufacturer has a half-page space at his disposal in this paper—half a page of opportunity to influence the minds of five thousand of his best prospects.

He will pay five thousand dollars for an equal opportunity for his salesmen, he pays perhaps fifty dollars for his half-page of white paper plus opportunity.

And then what?

—Does he sit down to write the copy for that space with the now -I'm -talking -to -five -thousand-prospects mental attitude?

Rather he is obsessed with the must -support -the -trade -press idea and words his copy something after the style of a platitudinous Christmas card.

And does he get results from his trade-paper advertising?

No, Charlie, he does not do any trade-paper advertising, never has done and never will do until he steps outside of his Ego and changes his mind: hence he gets no results.

Of course none of our readers fall into the above category of crimists or we would not be so crude in our manner of putting it.

But none-the-less it is a phosphoric fact that hundreds of manufacturers are wasting thousands and *tens* of thousands of dollars every per annum, to save which and to cause them to increase and multiply there needs only the mental attitude:—

"My trade-paper gives me the chance to talk to my trade!"

A NEW PREVENTATIVE FOR MOSQUITO-BITES

An interesting addition to contemporaneous preventative therapeutics comes to us from the piney woods of Southern Georgia.

Practical experiment has demonstrated the fact that mosquitoes, with which the woods of this state are infested, rarely attack the person of one who has been subjected to the bite of a rattlesnake within twenty-four hours.

The discoverer of this important fact—I. M. Nuttay, of Savannah—proposes to start a rattlesnake farm with the idea of artificially extracting the virus from the full-grown reptiles and putting it up in small attractive flasks for local consumption.

The method of extracting the virus is simple but interesting. A piece of fat pork is suspended by a small cord from the tip of a fish-pole and repeatedly struck against the head of the recumbent victim. Enraged at the interruption to his placidity, the snake sinks his fangs again and again in the offending pork, leaving the contents of his poison-sac therein.

To extract this in marketable form is then a simple process of infusion and filtration.

Small phials with a neat but serviceable hypodermic syringe for self-inoculation will be retailed at fifty cents, and should prove an invaluable boon to all sufferers from this small but irritating and dangerous pest.

WHERE LABORERS HIRE

CANAL STREET, CHICAGO - A BUSY MART

Written for "STEAM MACHINERY" by James Adrian Byrne

IF a laborer drifts into Chicago with no job in sight, nine chances out of ten he'll eventually land on Canal street, and apply for work at one of the labor agencies there.

Within a step of the Union and North-Western stations, into which trains come from the four winds, the location is very convenient. For if the laborer has arrived at these stations, he has practically no distance to go, and if he has reached Chicago by one of the other depots, he'll probably find himself in this vicinity, seeking the advantages of the cheap lodging-houses that abound just west of the river.

In addition to the influx of labor-seekers, there are the city "floats," who heretofore have been shifting about from one job to another in Chicago, and after a period of idleness, decide to take what they can get from the exchanges.

Another class handled by agents in this mart is the hobo crowd. Strange it may seem to hear of hoboes actually seeking work, but the paradox is found here, two or more of the exchanges doing an exclusive trade in hobo help. They are supplied almost entirely to railroads for construction work, probably enticed by the bait of a free ride several hundred miles on easier bunks than they have been accustomer to in "interstate travel."

Down-and-outs, too, are given a pass on the bread-ticket road. They apply indiscriminately at any of the exchanges—they have no preference—and go into anything, so long as there's a wage attached to it.

Of all these classes—and some who seek work on Canal street would not come under any of the heads given—the most hopeful and beneficial to the country is the first named. They enter the

spirit of labor with zest, many of them having fresh in mind the wonderful stories of America that were told to them while in Europe. The bad features of the country are to the majority of them absolutely unknown. They have left conditions under which there was little opportunity, and the long dream of the wonder land America is about to be realized.

Among these one can see the dull-eyed Pole, the fair Slav with his prominent cheekbones, Russians from the various provinces; there are Italians—honest-faced and rosy-cheeked men from the Alps country, and the lowering fellows we associate with sash-girt corduroyed Sicily. There are mild Huns with guttural names, and peaceful Austrians. All these and many more nations are represented in the throngs that send their emigrants to Chicago and Canal street for employment in the gold-dollared land of America.

Literally these men are building up our country. How? Thru the long bands of steel laid on the grades they construct, the bridges they labor on, the ties they unload. They carry the pick and shovel of construction work to the west and north and south. Of course, all aren't doing railroad work, for many go into the mines and into factories; but Canal street is the one great labor exchange of the country that makes a specialty of railroad help.

Then come the knowing and more saucy "floats." They've worked at almost every kind of rough work, and the desire for change has taken a firm root in them. They are incompetent mostly,—that is what makes them difficult to keep at any job. They are not hagglers, tho, these "floats." Any fair wage suits them, for it all goes anyway, and they come to figure that a little extra handled doesn't make them any happier. They are no-cares, literal ne'er-do-wells. Neither optimistic nor pessimistic, they live from sun to sun, sometimes with difficulty, but rarely in despair.

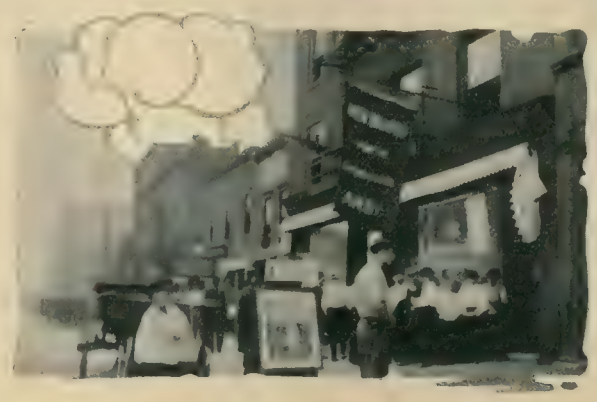
These fellows are apt to despise the foreigners, as child-men who dream of a future they'll never come to realize. They've lost appreciation of free institutions, liberty of conscience and of speech. Many of them, being Americans by birth, have never known any other conditions.

But the hobo crowd is probably the most interesting. The serum of reform has got in their blood, and they desire to live like civilized people again. They are ashamed, of course, to approach the high counter where an eager agent handles their desire for work. Often, as they idle by, the manager of the place, on the look-out for business, touches them on the arm, and suggests a job—free ride and pay. They enlist. It takes some time to think up their old civilized names, for Cleveland Aleck, Troy Pete, or Chicago Jack has become pretty firmly established as their titles on the index of life.

There are two of the agencies on Canal street that handle no other class of labor than that of hoboes. They are shipped far away, chiefly on railroad

work. The ride costs nothing while $4 a week is charged for board. This means of securing business has led rival agents to apply the term, "stomach robbers" to those engaged in the hobo trade.

The fourth class is down-and-outs. They're in most cases objects of one's pity, since many of them have seen better times, and have fallen to their present condition through recklessness, dissipation or misfortune. They are pessimists, every one of them, and they've got too far advanced to feel enthusiasm for a fresh start. The lightest kind of work is sought by this class, for in most cases the men are of an impaired physical construction.



In the heart of the employment district.

It is not hard to find the labor offices. As one walks along Canal street in the vicinity of Madison, his attention is attracted by the big placards, inscribed by hand, and bearing such inscriptions as: "Ho' Construction Work—Iowa, Minnesota." "Railroad Work C & N. W. Minnesota. 500 Men'" A unique line on one reads: "Board, O, So Good!"

Such cards decorate the fronts of the exchanges to such an extent that at times one has difficulty in finding the doorway.

From Clinton street on Madison to Polk on Canal there are at least fifteen of these exchanges. They vary in output from 50 to 500 men each a week.

Chant of the Corkscrew

I'm a simple-minded fellow
And I wasn't built for speed,
But you'll find no "streak o' yellow"
In the engines of my breed.

Where the loading crews are working
And the track is like a snake
You will never find me shirking
While there's still a load to take.

For the sawmill may be slowing
And the log-pond almost clear
And we've *got* to keep 'em going
If it busts a bevel gear!

I am sturdy and I'm steady:—
And when Moguls jump the track
You will always find me ready
To assist the blighters back!

And when Mrs. Sippy's daughter
(Helen Floods) goes on a tear,
I'll keep plugging thru the water
While the rails and ties are there.

Doesn't take a mint to try me
(For you couldn't call me *dear*)
Better write the folks and buy me:—
I'm the HEISLER (bevel-gear)!

O. HENRY

Famous Loggers
in Picture & Pome

Done under Protest for STEAM MACHINERY by

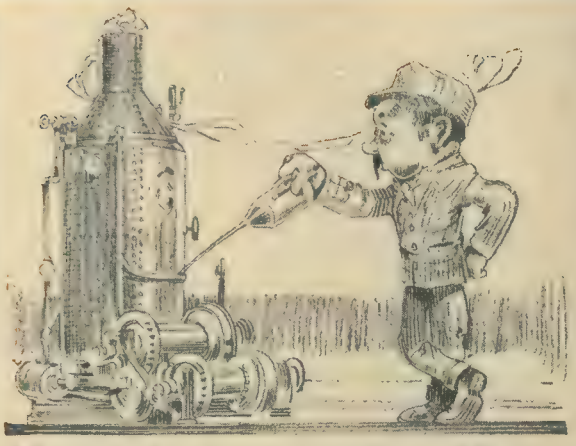
W. W. WOLFE

I sing that WOLFE who logs for White
Somewhere beyond Columbia way;
Who keeps his costs down out o' sight
Yet shows them to the S. L. A.

His camp is in a splendid stand
Of virgin longleaf yellow pine;
Located on the highest land
Twixt Mississip and Dixie's line.

How does he keep his costs so low
When he is logging in the sky?
Well reader, if you want to know,
Ask *him*—he'll tell you more then I!

C. HENRY



How to keep your Hoist Happy

Dont's For The Boss

Written for "Steam Machinery"
by A. E. Holcomb

26. Don't tell your men to do something and then change your mind and orders half a dozen times without finishing anything. Make up your mind definitely as to what you want done and see it through.

27. Don't tell everyone about it when in doubt as to the best thing to be done. Make up your mind on something, keep your own counsel, and get everyone busy. You will get ahead farther by doing something than by wearing out the patience and respect of your men by vacillating while waiting for an inspiration.

28. Don't when you want something done, tell your men generally to do it and thus start a mad scramble or else not get it done at all. Call out the names of the particular ones you want to do it.

29. Don't try to show your superiority and right to be boss by doing all the work while your men "Soldier" or stand around giving vent to admiring exclamations and private nudges as they hand you the tools to do the work. Profuse perspiration isn't a good recommend to the contractor looking for a profitable boss.

30. Don't overlook the fact that a few minutes a day spent in building up and maintaining a "Pride of Accomplishment" among your men will be more productive of good results than hours spent "Cussing them out."

31. Don't work the men in the rain or in mud and water without proper protection. Money invested in rubber boots and oil skins will soon be repaid in increased efficiency.

32. Don't work your men on poor food irregularly served. A good cook and plenty of wholesome food will be reflected in increased profits.

33. Don't allow your job to be held up for the want of a few extra parts. Always keep extra sheaves and cable on hand.

34. Don't leave extra parts, clips and thimbles lying around in the mud where they will get lost. Pick them up and put them away where they can be readily found when needed.

35. Don't be a grouch when something goes wrong. Laugh and get busy. The crew will not then get discouraged and make the work drag.

36. Don't stand and look at it when something goes wrong and tell how it ought to have been fixed in the first place. Start at once to fix it as it ought to be.

Dont's For The Runner

1. Don't run your gears dry, thus cutting down the effective power of the engine. Dope the teeth freely with heavy grease.

2. Don't swear when your frictions slip because grease has gotten off of the gears onto them. Put some flour or chalk on them instead.

3. Don't allow your cable to get loose and overwind on the drum, as it will damage the cable if it doesn't cause it to break.

4. Don't when your engine has been shut down for a short time, start it up without opening the drips.

5. Don't leave your draft doors open if you want a banked fire to last over night.

6. Don't start work in the morning when you have had a banked fire, and the stack cover on over night without blowing out your flues. This should be done as soon as you have a sufficient head of steam to produce a draft.

7. Don't allow the fireman to get lazy and fire too thick. Less coal at a time and fired oftener will make steam quicker and keep it up better, and besides, will cut down the coal bills.

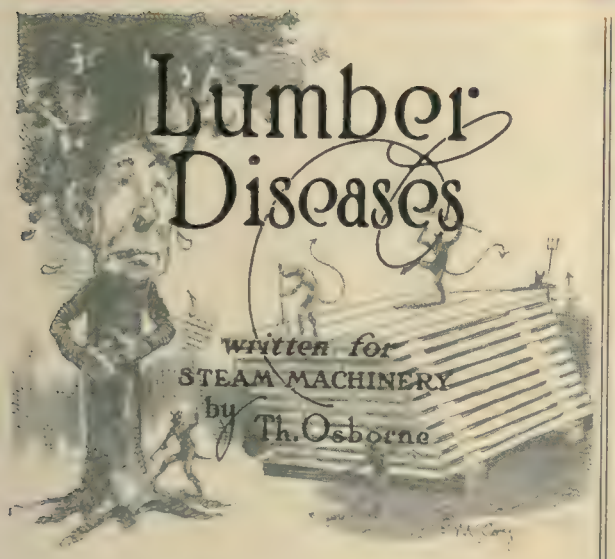
8. Don't get mad when you are breaking in a new fireman. Use good judgment by being patient with him.

9. Don't complain to the foreman every time your fireman makes a mistake. Show him his mistake and help him to rectify it. You will have made a friend instead of an enemy and have increased his efficiency.

10. Don't tell your fireman to his face that he is doing all right and call him everything behind his back.

11. Don't permit loafers to be with the fireman while the engine is running.

12. Don't do all the running yourself. When the work is easy and safe, break in your fireman to run. You may be sick some day and if your fireman can run the job will not be held up.



No. 2.

DISEASES of trees may be very roughly divided into two classes:—those affecting living trees and those which occur in lumber after it has been sawn up; the former are of more immediate interest. All lumber men and planters know that trees occasionally become rotten at the core and even hollow at all stages of their growth, and in the most various situations. It frequently happens that attention is first drawn to the injury by the wrenching off of a large branch during a storm, when the exposed scar shows the wood to be internally decayed. This decay is variously known as "wet rot," "red rot" and by other names, and may be due to a variety of causes, mainly to the destructive effects of some fungus parasite. One of the most destructive and dangerous of these fungi more especially attacks the conifers, a class of tree found both in America and Europe and probably the one most generally in demand. One variety of these dangerous fungi has the notable characteristic of producing its spores or seeds on the outside of the roots below the surface of the ground. Yellowish white masses are found attached to the roots, of the consistency of soft leather, with threads piercing the roots and drawing nourishment from the wood. This fungus has also the peculiarity of working its way under the bark and spreading itself out between the bark and the wood of the tree stem. The spores may be carried from tree to tree by small animals, adhering to their fur as they brush past a patch of the fungus. When a considerable quantity of fungus has developed between the bark and the wood, it occasionally breaks through and shows white or colored patches on the outside; when these appear the bark can easily be

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A paper you will take home with you because you enjoy reading it.

If you will write us for a sample copy and will mention Steam Machinery in your letter we will make you a subscription proposition that will interest you.

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Then you want to know all about western prices for fir, redwood, spruce, sugar and white pine, redwood and cedar shingles!

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SAN FRANCISCO

Successful Logging Tractor

that will go uphill, downhill, over side hills, on loose, soft or sandy soil; that will operate sucessfully on snow or ice and pull its load. Operates under conditions totally impossible for any other type.

The 60 H. P. Holt Caterpillar Gas Tractor lays its own track, rolls over on it and picks it up again. Its weight on this broad traction surface is only six pounds to the square inch—less than that exerted by a horse.

The HOLT

CATERPILLAR

Reg. U.S. Pat. Off.

turns in its own length and handles like an automobile—will hold its load on the steepest grades without "jack knifing" or slipping.

Hundreds of these engines are in use, including three on the Catskill Acqueducts, New York—largest contracting job in the world.

Send for Contractors' Bulletin C.E. 103.

Holt Caterpillar Co.

PEORIA, ILLINOIS

stripped off and if the growth on the wood can be burnt off without injuring the wood so much the better. The injury done to the tree is enormous, the wood is pierced in all directions for nourishment and the timber for many feet up the stem is reduced to a rotting useless mass. Should the diseased root of one tree come in contact with that of another, the disease is passed on, so that the trees are destroyed from below upwards. The symptoms of the disease are the fading color of the leaves, which die off prematurely; the rotting of the lower part of the stem, whilst the upper part still maintains its normal appearance. On examination the wood of the roots will be found to be soft and damp and readily friable by the hand. An expert can readily detect the disease at a glance.

If a piece of spruce-fir, which is suffering from this disease, is cut into the general color will be found to be yellow, whilst dotted about small patches of white will be seen, each with a black centre. These patches are portions of the wood, which have been completely destroyed by the growth of the disease. The development of the disease is as follows: when the threads or rootlets of the fungus first commence to penetrate the wood, they work upwards more rapidly than across the grain, as they can pierce the walls of the wood cells by means of a soluble secretion, which they produce. This fluid softens and dissolves the substance of the wood-cells and destroys its structure and firmness. When these threads enter a cell in the wood structure of a tree, containing the nutritive matter required by the tree, such as starch and protoplasm, the disease feeds on them. As the disease spreads, the healthy appearance of the wood changes, black spots develop, which later on become surrounded by white patches. These white patches are all that remains of what was once healthy wood. The disease having obtained all possible nourishment from one part proceeds to the next, until in course of time nothing would be left.

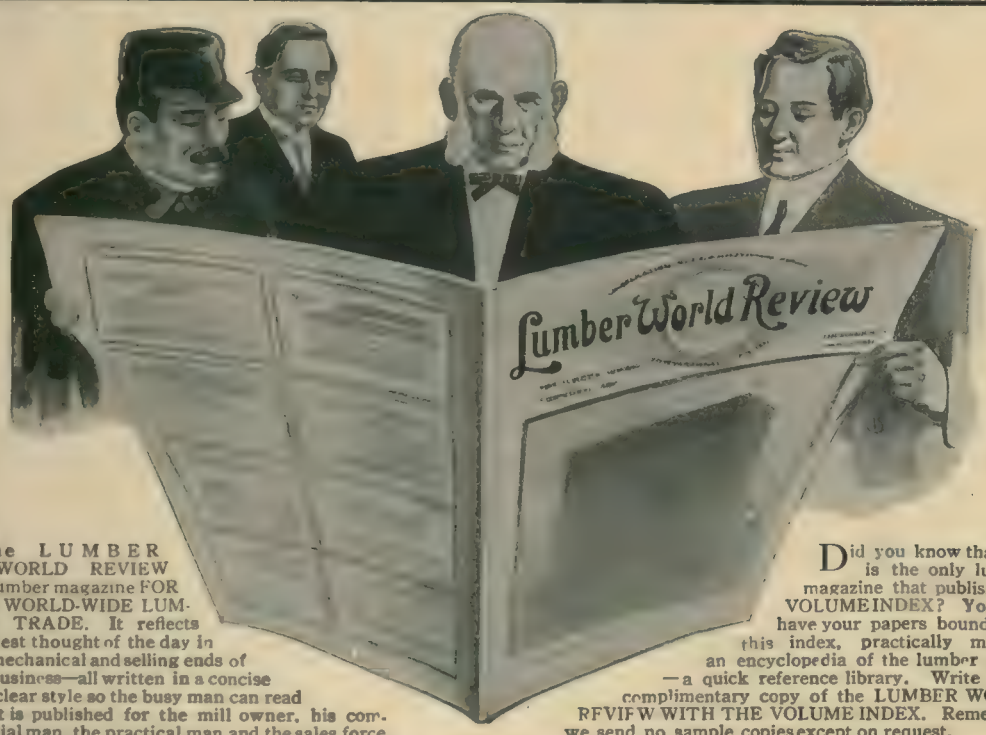
At the point where the stem rises out of the ground, many varieties of conifers, beech trees, oak and others are attacked by fungus in general appearance not unlike an ordinary mushroom. This parasite springs from long threads or strings, which extend both through the surrounding soil and the wood itself. They may extend thru a length of many feet, the mushroom like growth springing from them at various points, but generally from the roots, which are destroyed and that in turn ruins the tree. These underground stringlike processes enable the disease

THE selling-power of your Advertisement can never be greater than its *pulling power!*—Because people have got to *read* it before they can want what you advertise and they wont read it unless it *commands* their attention. How can you command attention to your ad?—Remember that *nothing pulls like a picture. Put a "cut" in your copy instead of in your price.* It costs less, produces more!—Let us picture your product so that your prospects may see for themselves! . . . . . .

Duluth Photo-Engraving Company

ARTISTS COMMERCIAL PHOTOGRAPHERS — ENGRAVERS ELECTROTYPERS

Duluth, Minnesota



The LUMBER WORLD REVIEW is a lumber magazine FOR THE WORLD-WIDE LUMBER TRADE. It reflects the best thought of the day in the mechanical and selling ends of the business—all written in a concise and clear style so the busy man can read it. It is published for the mill owner, his commercial man, the practical man and the sales force.

Did you know that this is the only lumber magazine that publishes a VOLUME INDEX? You can have your papers bound with this index, practically making an encyclopedia of the lumber trade—a quick reference library. Write for a complimentary copy of the LUMBER WORLD REVIEW WITH THE VOLUME INDEX. Remember we send no sample copies except on request.

Subscription $2.00 Per Year. Advertising Rates on Application.

Lumber World Review, 1740 Transportation Bldg. **Chicago, Ill.**

Are You Interested In the Forests?

¶ Are you a lumberman, a logger, a manufacturer, or an owner of timberlands?

¶ Do you want to know all there is to be known about the forests, their use, their value, their protection?

¶ Do you want to read articles by experts on every phase of forest conditions affecting your business?

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AMERICAN FORESTRY

The only Magazine of its kind in the United States

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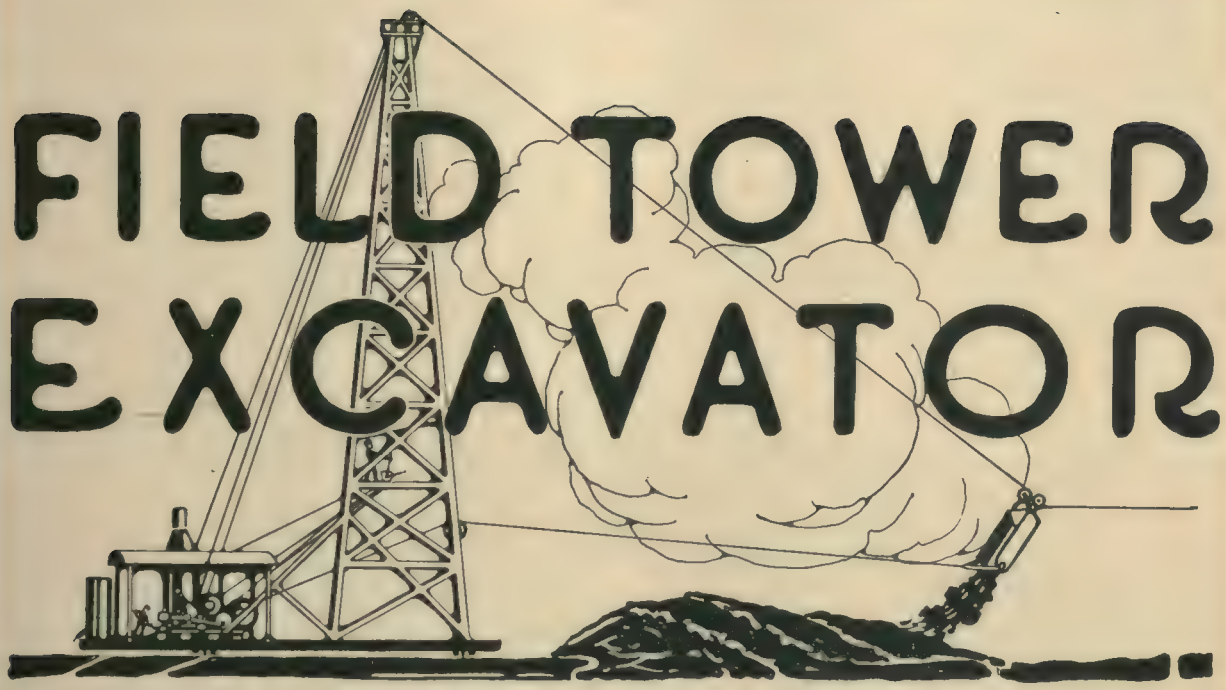
AMERICAN FORESTRY
Washington, D. C.

to extend from one tree to another, and in that way large numbers of sound trees may be ruined, should the fungus get a start. The diseased trees can be detected when they are struck on the stem just above the ground, the sound produced is a hollow one. The trees when felled show a rotten stump close to the ground, it may be hollow for several feet up the stem, the main roots may also be hollow. The dark colored rotten mass in the stem and roots will be found to be spongy and moist, it is the wreck of the wood and full of the threads of the fungus. The still approximately sound wood will be found to be discolored, with rotten patches at intervals, obviously the first stages of the disease. The only preventative is to burn the fungus before the spore bearing season arrives. The roots attempt to protect themselves by exuding resin. If the ground is dug up the thread like processes, of the disease may be found in the soil a few inches below, perhaps six or more extending from tree to tree. The trees appear to have no real defense against the attacks of these parasitic growths, the dust like spores are carried by the wind from place to place and can only be prevented by destroying the fungus before they develop spores, usually during the autumn. When one or more trees are found showing signs of this root disease, they must of course by cut down and the diseased portions must be burnt; whilst the ground around must be encircled by a ditch to prevent the underground threads from spreading. Oak, birch and many other trees are subject to another fungus which hangs down from the stem or branch like a series of small frills, one over the other, they generally attack trees where they have suffered some injury where a branch has been wrenched off, the bark torn, frost cracks and so on; from the wound they send their thread like processes into the surrounding wood. If an infested stem, or branch is cut across, the growth, white in color, will be found to follow the lines of the rings, also extending along the rays of the wood, which show also a change from the natural to an unhealthy color. The final effect on the timber is to reduce it to a powder; the structure of the wood is dissolved, the starch is transformed into cellulose, which is effected by some ferment excreted by the growth. The diseases which have been discussed are of two types: those which attack sound timber, as in the roots, and those which are so-called wound parasites, that is they have to find a weak place for the spores to commence their attack. There are a large variety of these fungi; many select special species of trees, such as standing conifers, others

FIELD TOWER EXCAVATOR



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prefer oaks and so on. An interesting point has been observed, sometimes a tree is attacked by two different species of these parasites at the same time, and the thread like processes which work their way into the wood may attack the same cells to feed on the starch; in that case neither of them get the starch, they seem to neutralise each other, it is a sort of stale-mate, a draw. Every injury to the bark of a growing tree is dangerous and a probable source of injury, whenever bark is destroyed, or seriously injured, the thickening layers of wood are not continued under the injured surface in the normal manner, a flaw results, the adjoining wood is also affected, thus abnormal cushions of tissue are formed round the wound. It may be affirmed that the disease arising from wound-parasites may be completely prevented, if no open wound is permitted to exist. Numerous fine trees perish before their time, or the timber becomes diseased and a strong gale throws them down, as the spores of one of these fungi has found its way to a cut or the torn surface of a pruned or broken branch. It should be noted that by properly closing over open wounds and allowing the surrounding bark to cover them up, as it will naturally attempt to do, the term of life of many a valuable tree can be prolonged, and its timber not only prevented from becoming diseased and deteriorating, but as a matter of fact increased in value.

Every forester acquainted with pines, beech trees, oaks and other species, knows that as the tree grows the number of branches are reduced. More buds are produced than develop into twigs, there is not a food supply for all, they are injured by insects and small animals, the falling branches from other trees break them off. The irregularity of trees results. In Conifers the buds are produced so uniformly that if all grew the tree would be perfectly uniform. To a certain extent the tree throws off many twigs naturally; in a forest most trees have lost their lower branches from a variety of causes and accidents; gales do considerable mischief of this sort, branches may die off through light being shut off by the foliage of other trees. The essential point is that however branches are broken off, open wounds are left. If these scars are examined some years after they have been formed, it will be generally found that a growth of bark has gradually crept over the wound, like a ring from the outside getting smaller and smaller every year until the exposed timber is completely shielded from outside attack. When a large branch is cut off close to the trunk, a ring of the

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outer bark and the inner skin is left exposed, which then commence to curl over. New layers of wood are formed under them, each year's layer tending to bend over the wound. On the lower edge however, this bending over tends to form a lip, which can hold some rain water, in which the spores of dangerous parasites may germinate. But if the wound is not too large and the tree is of vigorous growth, all vicissitudes may be overcome and a complete shield of bark is formed, which forms a sort of raised boss on the trunk. When a branch is sawn off, the saw cut should pass straight through, but often the work is carelessly done and the lower portion is broken off, injuring the bark and forming a jagged edge, which hinders the bark from covering over the wound in the natural way. The exposed wood may then be attacked and rot away; later on the wound is healed over, and when the trunk is sawn through a hollow is found below the covering of the wound, which may include more or less rotten timber. A preventative will readily suggest itself, which will enable a healthy tree from suffering from the effect of a wound due to a branch being either sawn, or broken off. When a branch is broken off, it should be sawn away close to the trunk preferably during the cold season, care being taken to get a clean cut and no tearing of the bark; the exposed surface of the wood should then be painted over with a coating of tar, that will effectually keep out the spores of fungi. It is essential that the tar should adhere to the wood, it should not therefore be applied during the summer, as it is then liable to peel off, and the labor is wasted. Any crack should be coated over; in other words the work must be done thoroughly and not carelessly. The healing process is hastened in some trees by the exudation of resin. So long as the wound remains wholly or partly unprotected, the exposed wood is alternately wetted and dried by the weather and its quality deteriorates; the outer surface of the wood rots, acids are formed which are carried into the healthy wood by rain and it is rendered more liable to be attacked by injurious fungi.

(To be continued)

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A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.
FOR THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER

JAMES BOYD
Secretary S·L·A·

A Monthly Magazine of Men, Machinery & Methods

STEAM MACHINERY

DULUTH MINN.

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THE EASY JOB

A Rondeau

"The Easy Job"—It saps the brain
And takes all triumph from the fight!
—Who need not work with all his might
Will work but little, and in vain.
What noble Visions it has slain!
What wan regret it breeds at night:
"The Easy Job"

Through sternest striving we attain
The summit of Ambition's height.
And live a moment in the light:
All this is lost to them that gain
"The Easy Job!"

C. HENRY.

The Editor Thinks

A COLD GREY light glows over the eastern horizon, faintly revealing a vista of leafless trees and dew-hung, trampled grasses. Other Things are revealed also: dim, huddled Things around which the silver mists billow, rising and falling. Sluggish wings flap heavily here and there as some great bird shape rises from one or another of these mist-washed mounds. There is a great cawing and fluttering of crows over beneath three barren pine trees.

And now the first shimmering messengers of morning come over the eastern hills, filling the thickets with melody and banishing the silver mists, writing ICHABOD over the glorious Yesterday of Crecy. It is no longer dew upon the grasses, but clotted blood.

The mounds are men; gashed, naked, with staring eyes and distorted faces, clutching broken weapons with frozen, nerveless fingers. From somewhere in the North comes the gay flourish of trumpets, and now a little group of knightly figures comes riding over the slain.

In the van rides a commanding presence in sable armor on a sable horse. At his direction, those who ride behind dismount from time to time and seek among the slain, turning the bodies over roughly, trampling on many a blood-stained flag of lilies or throwing the tattered folds aside.

At length they pause as tho' their search had been successful, and the Black Prince—for it is he, the darling of England, whose sword only yesterday carved England's name among those of the mighty war-nations of the world—himself dismounts and leans forward eagerly. Here is a strange imposing group among the democracy of the dead: three prone figures; at either side a stalwart man-at-arms each bearing upon his body many wounds thru any one of which the spirit may have flown, and, in the center, a yet-kingly corpse. The scattered grey locks, blood-matted, are still cinctured with the simple circlet of royalty, for yesterday this was Bohemia's king.

Sightless, senile and palsied, the old king had been led into his last fight by his most trusted servants, that he might strike a last feeble blow at his country's enemies and fall, as befitted a warrior-king, on the beloved sod which he could no longer defend. One of the Prince's men has brought the dead king's shield to his master, that he may read thereon the ensignia of royalty to verify the passing of a mighty foe. But here is no pomp of heraldry, befitting the state of a warrior-monarch in the days of chivalry! Three snowy plumes encircled by a band of iron, with, under all, the simple motto "Ich Dien"—I serve!

Seven centuries have passed since then, and still the simple symbol of the blind king adorns the arms of England's princely house. The three white plumes still wave before the eyes of men, and the brief motto still reverberates in their ears; grown now to the proportions of a great and elemental Truth. "I serve".

Such was the glory of Bohemia's

warrior-king, and such has become the faint or fond ideal of all our humanity. He never knew perhaps how well he served, this dauntless leader of a dauntless people: who served not alone his own people, but the people of an entire world thru many generations, passed and yet to come, in thus fixing upon their hearts his emblem of triple purity in body, mind and spirit, and his proudly-humble claim to Service.

For we have come to know, at last, that he who serves best is greatest among us and that whoever serves well shall be well served indeed in his own Soul.

△ ⊢ ♂

THE DIVINE FLAME of Loyalty burns most fervently before the altar of Youth for it is here that men are least selfish. Loyalty, supreme and splendid, to whatever noble end it may be directed, is the most glorious emotion to which the human heart has ever learned to thrill. Here we have sublime unselfishness in which the ego is inextricably blended with the all. He who is truly loyal to a thing, be it a college, a creed, or his own ideal of service and success, must live for and through that thing, admitting no rivals and permitting no distractions. He makes of that thing his most absorbing heart's desire and brings all his projected labor to be tested before the searching light of that censor.

Youth is far less apt to be self-blinded than Age. Youth has done so little and hopes to do so much. Age also has done little, but Age sees how a myriad men have done as little or less and no longer has either ambition or energy to aspire to the stars. It all falls back into the fact that Youth dreams of the Future, Age of the Past: Youth has nothing to be content with, age must be content and therefore is.

Glorious, sempiternal Youth! In your courageous hands lies the future of this universe of men which we in our turn have striven so hard to hold and help. Learn to take your courage and your dreams, your Love and your Loyalty, a little further with you down the Path of Service than we who grew tired so soon!

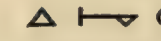
It is a wonderful old world we will to you, with all its potentialities scarce guessed at: if you will but be loyal to the trust—more loyal than we could find the heart and hope to be—there can be no period, in imagination or in fact, placed after the sum of your endeavor! You take it from our tired hands just when your own are most strongly thrilled and nerved to high attainments; with clean, quick brain and all-embracing energy you fling yourselves upon terrific tasks we never found the will to undertake and carry them to conquest before the stupendous force of your concentrated courage.

Build better than we builded, brave Youth; you must and shall. For have you not the sum of all our striving before you as a mark over which to rise triumphant?—And shall you dare to pass the weary old world on to our grandchildren no better and no more divine than when we dropt the blunted tools of our old craft? Thus were you counted out of the cosmos and become as dreams written in air; nothing and less than nothing in that you had robbed the world of one generation of its destined Gain.

But you will not fail, who have not learned the meaning of the word. You will go on and up among the kindly kingdom of your kind, bearing the race on the heaven-searching wings of your divine desire to a greater goal than we could ever glimpse.

Loyalty and Courage, Love and Labor: let these be the four steeds that

shall bear you in your chariot of To-morrow to the loftiest steeps revealed to you in your dearest dreams! Go on, go up; we may not follow, for we have made our supreme effort and found our own limitation. But we can and do glory in your achievements; we can and will inspire you with the visions you breed in us and drive away the demons of despondency when they would hound you to despair. Remember always that no man has ever done what you may do; that you are limited only by yourselves and checked only by the failure of your will!



EVEN THE BALD ANGELS will take off their halos to the man who leaves this world in the light of Love made perfect in Labor.

Love is everything in the world of the Spirit wherein dwells the Inner Mind of a man, but in the material world it is nothing but a flowing force.

Willy-nilly it comes to every man, bringing him neither credit nor happiness unless he holds it and sets it to work.

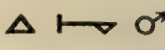
It burbles out of most of us like beer from a broken bottle, back into the vat: not really wasted, because it is as indestructible as electricity, but wasted so far as *we* are concerned.

Love labored into thots and things for the greater good of God and our kind is all we will have to show at the celestial box-office, but every man will have enough to gain him a seat in the bleachers behind a prop at least.

Because Love is indeed Life and a man can in no way continue without it, altho' he can get along on surprisingly short rations sometimes.

Of course he is a fool to do so, but then most men are fools:—that's why they are men instead of Gods.

The only Wisdom is Love perfected in Labor: all things else shall wear away but this, which passes out of time and space, becoming one with the all-present and Eternal.



UNHAPPY IS HE WHO EXpects nothing, for he will surely get it.

Nature is no Foundling's Home.

She never goes around looking for Orphans of ill-luck to adopt. She has her hands full finding worth-while things for Born Hustlers to win.

All things come to him who waits beside the Roadway of Life; they come and laugh and go, leaving him there.

But whatever a man wants he can have, if only he wants it with both hands and his head.

—If he want's nothing he can have that too, in fact that's the only thing he *can* have.

Man must want and work for what he wins or Nature's game would never be played.

He must get up and out into the field of Opportunity and hew out his own heart's desire in the sweat of his brow and the growth of his brain.

If he is to gain anything worth the winning he must work to some certain plan, or be like a pattern-maker working without a blue-print.

Love, Labor, Laugh and—look ahead.

—There you have the problem of life reduced to six words.

Far better to set your heart on the unattainable and spend a life of glorious striving than to lie in the mud with hookworms chewing their way into your vitals.

Because, when all is said and written, the joy is not in *having* but in getting; which explains how God gets so much done with such material as He has to His hand.

LOGGING IN THE REDWOOD COUNTRY

Described for "STEAM MACHINERY" by C.N. FOGG

TO the big lumbermen of the West with their giant mills and miles of railroad, the problem of opertions is stupendous, requiring a large investment in self-propelling logging machinery and a thorough knowledge of modern methods of cutting.

The redwood belt of California extends from the middle of Mendocine county north, through Humboldt and Del Norte counties, practically to the Oregon Line. It averages in width from two to three miles to twelve or fifteen, extending up the creeks and small rivers. Back from the coast and away from the river bottom, the growth becomes less luxuriant and more scattering. The Douglas fir, the so-called Oregon pine, takes the place of the redwood on the ridges and higher ground.

In the redwood belt the ground is very heavily timbered and while the trees do not attain the size of the giant groves of the Yosemite, those having diameters from fifteen to twenty feet are not uncommon. The entire redwood belt would average 100,000 feet per acre if cut by the modern methods now in vogue on the Pacific coast. The chopping of redwood trees is an entirely different proposition from the method employed in the East in cutting pine and spruce.

A redwood forest has no underbrush. The trees are very dense and hardly anything grows but grass, shamrocks, and fine specimens of ferns. Different theories are given as to the origin of these forests. One is that the trees get their nourishment from the air and it is true that redwoods are never found away from the fog belt. Looking down on the redwood forests in the early morning, one sees nothing but a bank of fog; and one who goes in among the trees in the first hours of the day will surely get drenched.

In Humboldt county are eleven redwood mills, part of them owned by men who came from New England and who have made good in their conquest of the big trees. Some of these mills cut over 300,000 a day. Not long ago the Pacific Lumber Company put $100,000 into a new plant, about $180,000 into new logging equipment, as much more for yards, and from $150,000 to $200,000 for wharfage.

These mills are on the Eel river where much lumber is cut. Some of the trees are from 12 to 15 feet in diameter and 200 feet to the first limb and very heavy at the butt. In times of freshet when these trees go down stream they take every ferry cable on the river.

The illustrations that accompany this article show the lumbering operations of T. W. Hine, a Maine man who has made good in the West and who has done much in developing Humboldt county.

Mr. Hine's timber is 40 miles from the mill and and a mile from the main line of railroad and across the river. An acre contains about 40 trees. When the stumps are blown out they occupy three or four times as much ground as when let alone. It is impossible to burn or rot them, so when stump land is taken up for farms, apple trees are planted right among the stumps. In spring they can kill the stumps by sprouting. Some of the redwoods are from 2,000 to 6,000 years old. In Mr. Hine's timber there is a spruce six feet in diameter, growing on top of a fallen redwood and the spruce

Peelers Ready to Begin Work.

must be over 300 years old. The redwood on which it stands is still sound. It takes 40 years to get a second growth of redwood and then it is but two and a half feet in diameter and not first class.

It costs something to cut redwood as it requires expensive machinery to handle such big logs.

In chopping, two men work together and the head chopper is held responsible for the work done by the set; his first duty in going to a redwood grove is to carefully inspect the trees he is to cut, and fell those that are hollow through the stump or that lean badly out of perpendicular. The leaning trees can only be felled in one direction, and as they are too heavy to allow one tree to be felled across the other, they have to be cut in such a manner that they lie on the ground with the trunks parallel to each other.

A set of choppers often work from a week to ten days getting ready to fall a single tree, before an axe is struck into it. They first determine where it shall lie on the ground; then if there are any knolls or hollow places within 150 or 200 feet of the stump, these hollows must be filled and the knolls leveled. This is called bedding and is done to make a complete level bed for the tree to fall upon. After the tree is prepared, the head chopper seats a stake about 150 feet from the stump and it is his business to so fall the tree that when it strikes the ground it will drive this stake. He must work in such a manner that the trunk will fall within six inches of the position where he wants it to go.

The next operation is putting in the undercut. Two men work together, one standing on each side the tree; one man chops right handed and the other left-handed, and they use a double bladed axe with a handle 44 inches long. This enables them to reach well within the center of the tree. Often the undercut is put in six or eight feet from the ground and then a staging is placed on each side of the tree. To do this, they chop into it, put in drivers, and lay a foundation across for the men to stand on.

After the undercut is completed as near as a man can tell by his eye, he determines whether it is correct or not by means of an instrument called a gun stick. This is something like a pair of compasses, so constructed that by opening it and putting one leg on each side of the undercut it can be seen whether the undercut is at exactly right angles with the bed on which the tree is to lie after it falls.

Then the men saw the back of the tree six or eight inches below the undercut, leaving six inches of wood clear across the tree and parallel with the undercut, not severed by the saw. Then by means of long, thin wedges, the tree is wedged over and usually

Yarding Logs in Holmes-Eureka Lumber Co's. Works.

falls in the predetermined position, driving the stake into the ground.

The trees are very heavy and when they strike the ground the sound is like a small earthquake and can be heard three-quarters of a mile away.

Immediately after the tree is felled the peeling crew takes charge of it. A set of peelers consists of three men, one called the ringer, and the other two, the peelers. The ringer's work is to cut through the bark of the tree or girdle it about eight feet apart, so that the peelers can strip off the bark very much the same as they peel hemlock bark in the Maine woods.

The peelers use steel bars five feet long and work in pairs. In summer the bark peels easily but in winter it requires great labor. After the trees are cut and the bark peeled, they are left to dry for a month or two: then when a suitable day comes with no wind and no indication of it rising, the waste is burned. All the bark and limbs not used are called waste in the redwood country.

The fire burns all the bark and the greater part of the limbs but does not hurt the solid tree. Redwood is about the hardest of any wood to burn. A tree that has been shattered or broken or a rotten or hollow tree will sometimes catch fire and continue to burn long after the main fire is out.

Within twenty-four hours after the fire starts, the ground cools so that a man can work in among burning timber. A crew of men with buckets of water and squirt guns can extinquish the fire so that practically no good timber is consumed. There is such an immense amount of debris on the ground that it is impossible to log in the redwoods unless one uses this method of burning.

Next comes the process of cross-cutting or "bucking up," as they call it, and the man who does this work is known as the cross-cutter or bucker. He cuts the trees into logs and suitable lengths to send to the mill. Trees of six feet in diameter or less are usually cut in forty feet logs, as this is the most convenient length, the greatest that the cars will take.

The butt logs or the largest of the trees that are over six and a half feet in diameter are cut into short lengths. Anything over nine feet it is necessary to split, as this is the largest log that can be taken through the railroad tunnels, or conveniently loaded on the flat cars.

The logs are split with gunpowder; two inch holes are bored in a row, from two to three to a log, and pretty well down to the center in a line. These are charged with from eight to ten ounces of common blasting powder in each hole, and then thoroughly tamped with dry clay. The powder is exploded with electric machines that explode

Log Landing with Cars Ready to Load.

all at the same time, and the logs usually fly open without destroying any appreciable amount of timber. If the tree is as much as twelve feet in diameter it is necessary to split the log again and it often happens that one log makes four carloads, being split into quarters.

The railroad logging switch is built as near as possible to the logs, and beside the railroad is a structure of heavy timbers known as the landing. The logs are drawn to the landing by donkey engines, built especially for the work and equipped with 2-, 200 feet of steel cable. To this the log is attached by placing a heavy rope round it and hooking it to the end of the cable. The rope is called the "choker." After the log is fastened to the cable it is pulled to the landing and taken in charge by the loaders who slide it sideways on the car.

Upon the cars are bunks; the logs are placed on the car and blocks fastened to the end of the bunks to prevent the logs from rolling off. The cars are loaded and made up into a train and then go to the mill. A single train load of logs will amount to from 90,000 to 125,000 feet.

When the train reaches the mill it is run over the pond on a trestle built out into deep water. The blocks are removed and most of the logs roll off into the water by their own weight. If a log on the car fails to move, it is pushed off by the gill poke, one end of which is put against a heavy timber and the other against the log; then when the engine backs up the train the gill poke pushes the log into the water.

All the butt logs of the redwood trees are heavier than water and sink instantly to the bottom of the pond. They are fished up by heavy steel tongs and brought to the surface by means of a windlass. These butt logs, sinkers they call them, are pulled out as soon as the train load is dumped and then sawed, while the other logs are stored for future use.

The redwood mills are some what similar to eastern mills, only the machinery is much larger and heavier, as it is constructed for the heavy timber and is known to manufacturers as the Pacific Coast models. The logs are handled much the same as in Eastern mills. They are first cut by the band saw into the thickness desired and then go to the gang edger which cuts the width required. Next they go to the trimmers, and from there, over the sorting table; then to the yard where they are piled for shipment.

The logs are turned off from the carriage, instead of on, as in the Eastern mills; and as they are so very heavy it is impracticable to use the same machinery for turning them that the Eastern mills use.

Redwood mills are usually equipped with two turning gears, one known as the log turner which pulls the logs off the car-

Summer Railroad Bridge in Humbolt County. Destroyed Each Year by Winter Freshets and Rebuilt Each Spring.

riage and on the bed of the mill. The other is the overhead canting gear which turns the logs by means of a heavy chain actuated by paper friction and heavy gearing.

As to yarding, one method is worked by skid roads; these are built up where gulches are too deep and crooked to allow the building of a railroad. At the mouth of the gulch the railroad is built, and the landing at that point where the donkey engine is installed. Then from here the skid road is built up the gulch.

Where the gulch is not too steep the skids are placed five feet apart so that a 16 foot log will bear on at least two of them at all times. The skids are from 12 to 20 inches in diameter and are laid crosswise to the road. Where the road makes a turn or bend, road spools of chilled iron are installed, round which the rope plays when pulling on the load.

A skid road is usually carried to the head of the gulch and is sometimes two miles long. The logs are brought to the skid road by a yarding donkey engine, coupled together into a train. The large logs are placed ahead, anywhere from 10 to 20 logs being coupled together to form this train. The coupling consists of two short pieces of wire rope with hooks in each end. Grab holes are cut in each end of the log, and these hooks are driven into the front and rear log and by this means, coupled together. The main log is hooked to the front one and the whole load pulled into the landing at one time.

If the gulch is quite steep, the logs in dry weather will come along without any great exertion of power, and it is sometimes necessary to wet the road when it is flat in order to enable the engine to carry the load. The water slingers do this. They run along ahead of the logs when it is dry and wet the skid road from the half barrels of water placed at intervals along the road-side. They have to sling the water in such a way as to make the entire road slippery and easy for the logs to slide upon. It requires practice to be a good water slinger and a man earns as high as $100 a month at the business.

Before the invention of the friction grip where the road was very steep, the logs in going down, would often run over the rope and become so badly tangled that it often took several hours to straighten out the load. But the friction grip overcame this difficulty. This is so constructed that the line of logs is attached directly to the grip instead of to the rope. Down the steep grades the logs slide faster than the engine can take in the slack of the

rope. The friction grip slides along on the main line with the log load until the logs slow down to the same speed as the rope, when the grip instantly seizes hold of the rope again, automatically, and the logs are again carried forward by the power of the engine.

All the lumbering operations in the redwood belt are conducted on the open shop principle. The mill owners never inquire as to a man's religion, politics or union affiliations. The men are better paid, better fed, and better used than in any other lumbering camps in the world, so the redwood lumbermen declare.

They go even farther and say that the lumber companies of Humboldt county receive better and more loyal service than do companies in any other part of the United States.

The woods crews are paid according to the kind of work they do. In the donkey crew is the head man or hook tender; he gets about $125 a month; the second man or "chaser," receives about $90, and the other two men, the "riggingslingers," get $75 a month. The sniper and peeler are also in the donkey crew and get respectively $75 and $65 per month. It is the sniper's duty to snipe or bevel the front end of the log all around so that when it is pulled to the landing it will slide by the stumps or any obstruction that may be in the way. The peeler must see that no bark is left on the logs when they are sent to the landing, and he has to assist the sniper. The hook tender has entire charge of the donkey crew and is held responsible for the output of logs.

In addition to these men who work among the logs there is an engineer at $90 a month; a fireman at $65; a loader at $90; a back landing man at $70; a wood chopper or wood bucker at $65. Usually, it is necessary to have a swamper on the landing to clear away the bark and limbs, and he gets from $50 to $60. The wage received by a water slinger has been given. It costs approximately $50 per day to run the donkey crew. This includes the wages, all needful repairs, and replacement of rigging, oil and grease.

Sawing Down—Tree Choppers Standing on Staging.

The men are housed in cabins furnished by the logging company, each one 12x16, and accommodating four men. Each man furnishes his own bedding and is boarded by the company for $15 per month. The men receive the very best food possible to obtain in the market and have plenty of every thing.

Sixteen years ago redwood and pine stumpage in Humboldt and Mendocino counties could be purchased from ten to fifty cents a thousand. Today, this same stumpage commands from $2 to $5 per thousand. The advance in many instances is as much as 1,000 per cent in the last six years.

Standing redwood is at present very difficult to obtain and is rapidly being accumulated by strong hands or held for investment or further logging operations. At the present rating it is estimated that Humboldt, Mendocino and Del Norte counties have enough to last 100 years.

Redwood logging operations are carried on all the year. There is no snow in this section except in the mountains. A number of companies are logging on the Eel river. This stream of water drains a very large area of country and during every season is subject to a rise of from 30 to 40 feet.

(Continued on Page 94.)

A big redwood tree was recently cut by T. W. Hine of Humbodt county and the logs measured inside the bark and at the small end:

	Diameter	Length	Scale
1st log	144 in.	16 ft.	16,688 bd. ft.
2d. log	144 in.	18 ft.	17,648 bd. ft.
3d. log	132 in.	20 ft.	16,504 bd. ft.
4th. log	126 in.	16 ft.	12,042 bd. ft.
5th. log	126 in.	20 ft.	14,870 bd. ft.
6th. log	120 in.	20 ft.	13,668 bd. ft.
7th. log	108 in.	32 ft.	17,778 bd. ft.
8th. log	108 in.	32 ft.	17,778 bd. ft.
			126,976 bd. ft.

Hardwood Men Meet at Memphis

And Give the S.L.A. a Boost

Brother Boyd Boosts for S. L. A.

Here Is What He Said.

THERE is no department of lumbering with the possible exception of the sales department, where there is an opportunity for so much loss as in the logging department. One of the best descriptions of the mental attitude of the average logging superintendent that has come to the surface was written by one of the officers of the Southern Logging Association. It follows:

THE STORY OF BILL AND HIS WORK

Which is the most expensive end of your operations, your milling or your logging?

Is seventy-five or eighty per cent of your total cost of operation composed of expense largely consumed in your woods operations?

Which department is given the most of your management's time, thought and attention to details, in which, by fact of its environments is your most efficient help employed?

Is it not your milling? Without a doubt, yes. Don't you think it would pay to devote more of your time to your logging? Your answer will depend largely on what you believe to be the highest point in efficiency. We have yet to see an organization so perfect that it cannot be improved. The method of improvement would be, to our mind, co-operation between lumber manufacturers for the betterment of conditions existing in their woods operations and developing to the highest state of efficiency the expensive logging equipment which all of them own.

Generally speaking, the management employs Bill Jones, a large brawny specimen of healthful manhood, whom they have known for years, and who they know to be an honest, fearless, hard-swearing, hard-drinking man and above all, an excellent "nigger" driver. Brains? Why we don't expect Bill to have any, we have all that is required; all we want Bill to do is to execute our plans with the same painstaking care that we have exercised in developing them. Poor old Bill! He has our deepest sympathy; the management can't see why in the deuce he can't log cheaper and Bill can't either, never having been around much, and having only one point of view dinned into his ear from time immemorial. He may have heard that John Smith & Co. are logging considerably cheaper than he is, but he just simply don't believe a durned word of it. Why, Bill? Well, because we use teams and a loader and they have one of these here combination skidders (or whatever type it happens to be).

How do you know that John Smith & Co. are not doing good logging with their skidder? Well because Mr. Johnson, our manager, went over there and he said he would not have one as a present. How long did Mr. Johnson stay over there? Oh, I suppose he stayed an hour or two, couldn't have stayed longer because he left home one day and got back the next. How often does Mr. Johnson come out to the woods? Oh, sometimes once a week and sometimes once a month. How often does he write you? Humph! every day. Do you answer his letters? Not often. Why? Well, he writes and asks so many durned fool questions, wants to know why I did this and that, and why I don't do so and so, just as if I bought this durned old loader and these old cull horses and mules.

Say Bill, was Mr. Johnson ever a logging man? Naw. Was he ever a mill man? Naw. Then how did he get his job? Humph! kinfolks.

Now, Mr. Manager, why don't you wake up and get a move on yourself, send your membership fee of $10 to the Southern Logging Association, James Boyd secretary and treasurer, care of The Lumber Trade Journal, New Orleans, La., and bundle old Bill up and send him to the convention, and let him learn why John Smith & Co. are doing better logging than he is; let him get in touch with men who are doing things and you will be amply repaid. If you can't trust old Bill, and you are afraid he will go down there, kick up his heels, join some labor organization and play the devil generally, go along with him yourself and we are confident you and Bill will go back home with a better mutual understand-

Officers of The Hardwood Mfgrs. Association

ing and a renewed determination that will mean dollars in your pocket.

That's right, get mad and throw this letter in the waste-basket, but we pray that the office boy will surreptitously rescue it and give it to old Bill, and that he will sneak off to see a sick wife or mother and will come to the meeting, for we might learn something from Bill's experience. Could we learn anything from Bill's manager? Well, we pity Bill.

Please remember that the writer is not looking for a job; he has one and is selfish enough to want to hold it. To hold it, however, he realizes that he has to keep abreast of the times; therefore he is very anxious to meet Bill and will give him the benefit of his experience without reservation, hoping to get an idea from Bill which will be the means of saving his employers ten cents per M on their total annual cut.

Remember if you get cheap logs, you can operate your mill at a profit, instead of having to close down when a depression in prices comes along."

LOGGING METHODS LACK STANDARD

Prof. R. C. Bryant, professor of Lumbering, Yale Forest School, Yale University, in a recent letter says:

"I have traveled over the greater part of the South during the last seven or eight years, and have visited a good many operations. One thing that strongly impressed me in the logging work has been the lack of standardization of logging methods, even where operators were working under conditions that were very similar. I have always felt that the southern logger knows too little about what his neighbor is doing, and for several years I have advocated in a quiet way amongst my friends in the South who are engaged in the lumber business, the advisability of sending their logging superintendents around to visit operations of at least the companies in their vicinity.

"I believe that your association can do a great work by attacking the problem of standardizing methods of operation in the South. It is possible that you already have this in mind. It would seem to me that it would be money well spent to employ one of your most efficient loggers to study the various methods of operation, and to bring before the members of your association the best points of the more efficient operations. I do not know of anything that would be of more real value to the industry than work of this sort."

OBJECT OF THE ASSOCIATION

The object of the Southern Logging Association is to bring about a low cost of logging, which can be done only by standardization, while standardization can only be accomplished by a discussion of methods at frequent intervals by men who are actively engaged in logging operations. The Southern Logging Association affords the medium of exchange of ideas and experiences in an orderly manner. Its greatest accomplishment has been to stimulate each superintendent to compete with himself, so that he is constantly lowering his costs. Instead of approaching his work with an attitude to get through with it anyway so it is done, he makes a study of it, having in mind solely how it can be done in the quickest time and at the lowest cost.

EVERY PHASE OF LOGGING

At our meetings, we take up every phase of logging. We usually begin with the tree, ending with the mill pond. In the last two years, lower stumps are common practice, resulting in a saving of considerable lumber in the best log in the tree. One of our members says his employer says that since he attended our meetings he saves twenty per cent of what he used to waste. Laying out spurs and building railroad are subjects that are always fruitful for discussion. It has developed that steel gangs handle four, five, six, rails a day up and down to a man. The superintendents who were getting only four rails found out that they were deficient, so when they got home, they speeded up their gangs. Some men use hewn ties, others poles. A variation in the prices paid for ties resulted in saving to those who had been paying too much.

At one of our meetings inquiry was made as to the cost of unloading coal burned in locomotives. It was found that it varied from $3.20 to $15 a car. The $15 man was using his section crew to do the work. One man said he had been paying $10 a car, which he thought too much, so he looked around, finding a man who would do it for $5. He then found some men who would unload if for eight cents a ton. Another man said it cost him only fifty cents a car. He built a trestle, insisted in getting coal in hopper cars, and dumped the coal.

Incidents of saving are many. There is on file in the secretary's

Report of Committee on Logging.

Your committee, appointed on January 21, to report on the discussion on logging commends the executive board for setting aside the afternoon to a discussion of this important subject.

We feel that everyone who listened to this discussion received benefit.

We therefore recommend that the Hardwood Manufacturers' Association of the United States commend the work of the Southern Logging Association.

We also recommend that members of the Hardwood Manufacturers' Association of the United States who are doing their own logging become members of the Southern Logging Association, feeling fully satisfied that every participant in its meetings will be fully repaid for the time spent in advance.

T. B. McCormick
J. H. Friant
E. W. Tschudy

office a letter from a lumber company acknowledging a saving of $6,000 because it sent its superintendent to one of the meetings. He had a problem as to how to get to certain timber and to get it out. He outlined his plan. It was discussed, new views were proposed, and an agreement resulted in a plan that effected the saving.

The program at our annual meeting in September included addresses on possibilities of a second cut of Southern pine; close utilization of timber; organizing new logging camps; camp boarding houses, or how to feed men; detailed accounting; bonus system or task work; log cutting; feed; civil engineering problems; fuel and care of engines and welfare work in logging camps. All of these addresses were discussed. In addition there were discussions of problems in logging hardwoods, cypress and yellow pine; problems of skidders and loaders; care of blocks and wire cable; laying track.

Most of these subjects have a direct bearing on hardwood logging. Another subject of greatest importance to hardwood lumbermen is the discovery of some cheap method of keeping bugs out of logs at certain seasons of the year.

DATA FROM HARDWOOD OPERATIONS

Economy in your logging operations will result if you will join the Southern Logging Association. We will hold meetings especially for hardwood interests at convenient places when nothing but subjects pertaining to hardwoods will be taken up and discussed. The need for such meetings will be apparent when I tell you that I sent out letters to five mills each in Arkansas, Louisiana, Mississippi, Alabama, Tennessee, Kentucky and West Virginia asking for information regarding costs, so that I could submit it to you, but it has not come in such shape as to be available for comparison.

One concern writes:

"Our cost runs around $5 to $5.50 per M log scale. We log oak, ash, gum, elm and a small amount of cypress. Logs average fourteen feet long, two logs to the tree. Use skidder and teams. Lands, bottom lands Arkansas."

Another writes:

"Our logging is done with teams and a steam loader, the average cost being; cutting $1, hauling $3, tram road construction $1, tram road operation fifty cents; total average $5.50. Handled 1913, 4,000,000 feet. Louisiana."

Another writes:

"Our logging to mills costs us from $3 to $5 per M log measure. Our timbered lands are all located in middle Tennessee, oak, poplar and chestnut."

"CLINT" CRANE

Another writes:

"We pay from $4 to $5 for most of the logging that we have done. We operate in several localities, Virginia, Tennessee and North Carolina. Most of our logging is of a very rough character, being well up in the mountains. It is all done in the old fashioned way, with cattle, horses, mules and men."

Another letter reads:

"The way in which our stumpage is used makes it a little difficult to comply with your request for logging statistics, but I will give you all of the information that seems pertinent.

"You understand, of course, that we are using our large timber through the mills and the cut-over lands are then being worked for the tie timber left on them. In addition to this we supply the timber for an ash handle factory, a hickory and oak spoke factory and a heading mill, so you can see that our entire timber operations contemplate the practical removal of all of the stumpage from our lands. The sawmill logs worked up last year averaged 186 feet, part of them having come down the river and the balance having been brought in by our logging train.

"The cost of delivering the logs to the mill was $7.67 as compared with $7.51 a year ago. The total amount manufactured into lumber was 28,242,542 feet. We use some home-made log loaders, built on the style of the old Decker-Spud-geared loaders that were in vogue some time ago. These we find very satisfactory for our type of logging. We work cattle and mules.

"This section of the country is made up largely of what is known as ridges and swamps. The ridges are simply little elevations which stay dry while the swamps are wet. We try to do our logging during the months of October, November and December, so as not to be compelled to work in the water during the winter or wet season. Of course, there are some special log bills to come out all of the time, and we maintain an organization for that purpose. When it is too wet to work the low places we try to work the ridges, and so far have succeeded in doing this very nicely, so as to keep the mills supplied with plenty of timber right along.

"As soon as our logs are cut (no matter whether it be in summer or in winter) we creosote the ends with a weak solution of a home-made mixture that resembles lorac, but that is considerably cheaper and serves the purpose just as well.

"Our logging operations are

located about thirty miles south of the mill and we maintain two engines to handle the loading. These are small saddle-tank engines, and the road work is done by a standard locomotive of the Mogul type. This road locomotive makes two trips each day and brings the trains into the plant, where they are taken in charge by another standard locomotive and the logs are unloaded into the river. The floaters are sent down stream to our No. 1 mill and the sinkers are picked up by an overhead trolley and taken to the No. 2 mill."

Another operator, who is getting out mostly cottonwood and gum with about fifteen per cent of oak and miscellaneous hardwoods reports:

"During the period January 1, 1913, to October 1, 1913, we logged 14,114,123 feet at the following costs: Timber cutting, 57 cents; logging to track, $2.17; loading cars with loader, 31 cents; railroading to mill, 89 cents; total $3.94. Tracks are usually laid half a mile apart, so that hauling is from a pickup to half a mile. The cost of railroading is based on tariff rate of our incorporated road. Logs average three to tree, and about four to the thousand feet. Arkansas bottom lands; skid with teams."

ANALLSIS OF LOGGING REPORTS

You have just listened to reports from six logging operations. There is not much basis for comparison, but some deductions can be drawn from the data before you. The lowest cost is in Tennessee, where one concern reports cost of from $3 to $5 a thousand and another $4. Neither company gives the amount of logs put in by it. It is too bad that the details were not furnished to us for then we could make a close analysis, determine which was getting its logs in the cheaper and show where the other concern could save money. That is what the Southern Logging Association does for those who attend its meetings.

Two reports come from Arkansas. One gives costs at $3.94, the other $5 to $5.50 a thousand. The latter does not give details. A Louisiana operator reports $5.50 giving details. These three operations are under similar conditions as to country. If the Arkansas $5.50 concern had given us details of its operations, we would have a basis for a profitable discussion. As it is, we can compare the Arkansas $3.94 proposition with the Louisiana

T. B. McCORMICK

$5.50 proposition. In Louisiana cutting was $1 a thousand, in Arkansas fifty-seven cents a thousand, a difference of forty-three cents in favor of Arkansas. We do not know why there should be this difference, but there is an opportunity for the Louisiana man to scale down his cutting cost. He put in 4,000,000 feet last year. If he can save forty-three cents a thousand, he would save $1,720. This possibility would have appealed to him when the subject of log cutting was brought up at a meeting of the Southern Logging Association, causing him to find out there and then, why the other man was able to save so much.

The Louisiana concern reports cost of hauling logs to track $3 a thousand. The same Arkansas concern reports $2.17. Both use teams. This is a difference of eighty-three cents a thousand in favor of Arkansas on hauling or a possible saving of $3,320 on the annual output of the Louisiana concern.

The Louisiana concern reports no cost of loading on cars while the Arkansas concern reports thirty-one cents. If the cost of loading is included in the $3 hauling cost of the Louisiana company, and thirty-one cents loading is added to the $2.17 hauling cost of the Arkansas company, the hauling and loading will be $2.48 as against $3. There is room here for an investigation, which would undoubtedly show where savings could be made. On this basis the Louisiana concern could save $2,080. We have figured a possible saving of $1,720 on log cutting, $3,320 on hauling, or $2,080 for hauling and loading, a total of $5,040 or $3,800.

The tram road operation of the Louisiana concern cost fifty cents, as against eighty-nine cents tariff for hauling logs of the Arkansas company's incorporated road. There is no data as to the length of haul. The Louisiana operation has $1 a thousand for tram road construction, which does not appear in the report of the Arkansas operation, although its spurs are placed half a mile apart. It may be that the incorporated road of the Arkansas operation pays for the construction of spurs and the operation of spurs and main line.

Another Arkansas operation reports log scale:

"Cutting 11,682,799 feet, $.987 per M; team hauling, 9,776,514 feet, $2.126; steam skidder, 1,906,285 feet, $2.247; steam loading, 11,317,413 feet, 2$.247; railroad expense skids to mill, 13,223,698 feet, $3.512; total cost $7.267 log scale. Rough, quite hilly in some sections and bot-

tom lands. Hardwood logging done along with pine. Hardwood logs average 160 feet of lumber."

As compared with the $3.94 operation it pays .417 cents more for cutting; .044 cents less for team hauling; .312 cents more for steam loading; $3.512 as against eighty-nine cents for transportation or as against $1.50 for the Louisiana operation. One of these Arkansas operations put in 14,114,123 feet of logs and the other put in 9,776,514 feet with teams; cut, 11,682,799 feet, loaded 11,317,413 feet; and hauled over the railroad 13,223,698 feet. These two concerns could get closer together on several items.

From the reports to which you have listened, that go into detail, the following table is made:

Cutting, 57c, 83c, .987c.

Hauling, $2.126, $2.17, $2.38, $3.00.

Loading, 31c, 33c, .642c.

Railroad expense, including spurs and main line to mill 89c, $1.50, $1.62, $3.52.

A number of replies were also received from concerns that do their logging by contract and from others who buy logs delivered on railroads. None of them, however, gave any figures.

You will be surprised at the way your men will take hold of these logging meetings, how well they will talk and criticize, with what vigor they will attack their work when they get home, and how your costs will decrease. Many times has the statement been made, "There are no two logging jobs alike, so that the costs are the same."

It is true, but if the man who is in charge of the logging as a result of attending logging meetings becomes so impressed with the idea of keeping down his costs that he works with no other object in view, he is constantly saving you money, so that the $10 a year the association costs you is an investment bringing in dividends every day in excess of the original amount invested.

The constitution of the Southern Logging Association provides:

"The membership of this association shall consist of mill owners and timber owners represented by their logging superintendents and general managers and contractors, whose daily output is 10,000 feet or more and who are in actual operation for some lumber manufacturer."

Your membership is invited. It will return the investment many times every day.

Effort to be productive must be organized and directed. Few persons work to advantage alone. Most of us lack initiative. This makes organization necessary.

Discussion on Logging

President DeLaney: I think we are under great obligations to Mr. Boyd for that very able address. This is a matter in which we are all interested, and one in which we have, I think, the most difficulties in connection with our manufacture.

I should like to have, as provided for on our program, some discussion on logging. We undoubtedly have some logging men here who can tell us something of the methods that they are using now that might be of benefit to us and result in our making sufficient saving in our logging cost to pay the expense of the trip to Memphis. Cannot we hear from some of these gentlemen? Mr. Carrier, I believe you told me that if I would come down to your place you would show me how to make a million dollars, or something like that, on the logging end of the game.

R. M. Carrier, Carrier Lumber & Manufacturing Company, Sardis, Miss.: Our manager, Mr. McCormick, went down to New Orleans to attend this logging congress of which Mr. Boyd is secretary, and he came back so enthusiastic over what he had heard down there, also giving me an outline of their work, that I immediately took it up with the main office to bring this subject out here to-day. There is no question but that this is a very vital matter to all of us that are doing logging. Of course there are some here who buy their logs and who do not have that trouble. Mr. McCormick told me that there were only about three or four hardwood men at that New Orleans meeting, that there were so few of them that they really could not do much discussing of the hardwood subject. The yellow pine men prevailed. I think, however, the hardwood men gained a great deal by listening to what the yellow pine men had to say, although there is a great difference of course in the logging of the two kinds of timber.

SHOULD JOIN LOGGING ASSOCIATION

The suggestion at once occurred to my mind that we either should have a logging association of the hardwood men, or else a hardwood branch in the present organization, and send our logging superintendents to these meetings. I believe an offer was made at that time, and also in Mr. Boyd's paper, that if sufficient hardwood people joined the association they would give them a special department; but the hardwood attendance did not amount to anything. The principal thing is to go to the meetings or send our logging superintendents there, and they will have a hardwood department in it and can meet separately at the same time with the yellow pine men—meet and have these same discussions that the yellow pine men have. For instance, when Mr. McCormick went down there I don't believe any of the hardwood men had any statistics, and so they had no basis to take the matter up on; but I think every man that will go there and take all the statistics and costs of that department with him will be able to make a complete comparison; and I believe that if this idea of getting our logging superintendents together and working to better our logging conditions, including all of those that Mr. Boyd brought up and also sanitary conditions, attention to which is a very vital matter in the South, there will be a material improvement in general conditions of our camps. If this is done I believe that every one of us will be many times repaid for the trip here. I would certainly like to see it done. I really believe myself that the best way would be for the hardwood people to work right in this present organization.

(Continued on Page 88.)

NEWLY ELECTED OFFICERS *of* Hardwood Manufacturers Association.

President, Jno. H. Himmelberger, Cape Girardeau, Mo.
First Vice-President, B. B. Burns, Huntington, W. Va.
Second Vice-President, Ralph May, Memphis, Tenn.
Treasurer, C. M. Crawford, Coal Grove, O.
Secretary, W. H. Weller, Cincinnati, O.

OTHER MEMBERS OF EXECUTIVE BOARD

W. E. Delaney, Kentucky Lumber Co., Cincinnati, Ohio.
H. B. Burke, Lamb-Fish Lumber Co., Charleston, Miss.
R. M. Carrier, Carrier Lumber and Manufacturing Co., Sardis, Miss.
Clinton Crane, C. Crane & Co., Cincinnati, O.
W. H. Dawkins, W. H. Dawkins & Co., Ashland, Ky.
Frank F. Fee, Fee-Crayton Hardwood Lumber Co., Dermott, Ark.
W. A. Gilchrist, Three States Lumber Co., Memphis, Tenn.
E. A. Lang, Paepcke-Leicht Lumber Co., Chicago, Ill.
E. B. Norman, Norman Lumber Co., Louisville, Ky.
W. M. Ritter, W. M. Ritter Lumber Co., Columbus, O.
E. O. Robinson, Mowbray & Robinson, Cincinnati, O.
S. Leiberman, Leiberman, Loveman & O'Brien, Nashville, Tenn.
W. B. Townsend, Little River Lumber Co., Townsend, Tenn.
R. H. Vansant, Vansant-Kitchen Co., Ashland, Ky.
E. M. Vestal, Vestal Lumber and Mfg. Co., Knoxville, Tenn.
E. R. Gadd, Wisconsin Lumber Co., Chicago, Ill.
Geo. E. W. Luehrmann, Chas. F. Luehrmann Hardwood Co., St. Louis, Mo.
J. F. McIntyre, J. F. McIntyre & Sons, Pine Bluff, Ark.

EXECUTIVE GRADING COMMISSION

W. E. Delaney, Chairman, Kentucky Lumber Co., Cincinnati, O.
R. H. Vansant, Vansant-Kitchen Co., Ashland, Ky.
Thos. W. Fry, Chas F. Leuhrmann Hardwood Co., St. Louis, Mo.
C. M. Crawford, Yellow Poplar Lumber Co., Coal Grove, O.
F. A. Kirby, Cherry River Boom & Lumber Co., Philadelphia, Pa.
W. B. Burke, Lamb- Fish Lumber Co., Charleston, Miss.
W. H. Dawkins, W. H. Dawkins Lumber Co., Ashland, Ky.
C. L. Harrison, Himmelberger-Harrison Co., Cape Girardeau, Mo.
Frank F. Fee, Fee-Crayton Lumber Co., Dermott, Ark.
J. W. Mayhew, W. M. Ritter Lumber Co., Columbus, O.
R. M. Carrier, Carrier Lumber and Mfg. Co., Sardis, Miss.
B. B. Burns, C. L. Ritter Lumber Co., Huntington, W. Va.
M. B. Nields, Little River Lumber Co., Townsend, Tenn.

Famous Loggers
in Picture & Pome

Done under Protest for STEAM MACHINERY by

VIC LANGLEY
THE LOW-STUMP LOGGER

Twas the Fall of '12, I think,
When a certain logging-gink,
Came a-floatin' to New Oreleans
Which is just this side the Drink.

Having landed there O. K.
Next he taxi-cabbed his way
To the Hostelry de Grunewald
Where they keep the S. L. A.

Here the Southern Loggers all
Gathered in Convention Hall,
Here he came and saw and squatted
Like a violet, by the wall.

Sat and heard them pray and preach
Listened to 'em learn and teach,
'Till the pressure sprung his safety
And exploded in a Speech.

Wow! Gadzooks! and also Zounds!
—There were *some* assorted sounds
Binged from that euphonious taster
O'er the fence and out of bounds!

Some reporters who were there
Chewed their pencils in despair:
Couldn't catch the swift Vibrations
As they hurtled thru the air.

(Continued on Page 88.)

POETICAL PROPHECY REALIZED

"Lives of great men oft remind us
We can make OUR lives sublime
And, departing, leave behind us
Footprints on the sands of time!"

Statement of Longfellow Vindicated and Substantiated in Recent Announcement *by* Mr. U. B. Imo Rtal, Famous Fakir of Sicta-Sukasour: Here Reported Exactly as Given *By* Himself to S. MacHinery.

AN announcement was recently made in the metaphysical press of this city which will prove of undoubted interest to all who seek Fame rather than Fortune as the final reward of life.

Mr. U. B. Imo Rtal, third cousin of the well-known Begum of Sicta-Sukasour, was the author of this announcement and is our authority for repeating it.

Mr. Rtal is a member of that religious cult whose devotees are known to our Occidental civilization as Fakirs, and has attained the greatest proficiency in assuming at will the cateleptic trance state which is the especial study and practice of this sect.

During the progress of one such trance, Mr. Rtal succeeding in projecting his mental body to the very shores of the Sea of Eternity.

Having thoughtfully provided himself with an empty shoe-box before entering the trance, he was enabled to carry into execution a project which had long been uppermost in his mind.

This was nothing less than to fill the shoe-box with sand from the shores of Eternity, which daring and original concept he accomplished with entire success, returning to the physical plane with some fifteen English pounds of this interesting and valuable material.

With this as his base, he has organized a company, having a paid-up capital of a half-million dollars, four hundred ninety eight thousand of which were accepted by Mr. Rtal for his priceless sand.

The company is organized for the purpose of selling plaster-casts of original footprints in this sand, and a large and profitable demand for its product is anticipated.

It is rumored that Mr. Huerta of Mexico City has consented to the taking of an impression from his right foot, a cast from which will be placed in the Peace Tribunal at Hague.

The sand will be removed from its original container and placed in a large shallow tray to facilitate the taking of this impression, Mr. Huerta being possessed of an exceptionally wide and heavy pedal extremity.

This being on the order of a test or sample cast, no charge will be made for it.

In the future, however, a nominal charge of one thousand dollars is to be made for all casts from the foot-prints of nearly-famous persons who might reasonably be expected to leave their imprints in the Sands of Time in the customary manner.

All others will be required to pay a larger sum, graded according to the greater or lesser chance of their obtaining Immortality for themselves.

Loggers and editors of trade-papers will be priced at an even million dollars, their chances for immortality, except with the "t" omitted, being estimated at Absolute Zero.

A special price of nine hundred ninety-eight thousand dollars seventeen cents has been offered to the present Professor of Law at Yale, the reduction being founded on the understanding that he recently occupied an even more exalted position in national affairs, insuring the preservation of his name at least in the historical text-books of the future.

The seventeen cents are to defray the expense inseparable from making an extra-large cast.

The present Secretary of State has already made an appointment with Mr. Rtal, the price in this case being agreed upon at four cents.

Mr. Rtal accounts for the extreme moderation of this charge by explaining that the customer is already assured of immortality through the Sunday Supplements of the future

Mr. Carnegie was approached by a representative of the company but declined to consider a proposition, his extreme modesty forbidding any attempt to artificially augment his claims upon posterity.

It is reported that the representatives reduced his proffered price to as little as nine hundred fifty thousand in an effort to shake the decision, but the pawky little Scotchman remained obdurate.

With our other Great Capitalist, John D. Rockefeller, it is reported that the company were more successful; a cast of his left foot (as being nearer his heart) having been ordered for the Rockefeller Institute to be used as a vivisection-slab.

The charge in this case has not been made public, but it is rumored at a little more than twice that made for loggers and trade paper editors.

Since the opening of the company's office in this city, the State of Indiana has become practically depopulated, the entire season's crop of authors having started towards this Mecca of Immortality, most of them on foot in case Mr. Rtal should happen to charge more than Twenty-five Dollars for their imprints.

It has been suggested that a

Hall of Fame be builded here to accommodate casts from the feet of those pilgrims who wish to have them made simply for the sake of the Nation and who will actually prefer to leave them in some such place (with an appropriate sticker affixed to them) rather than take them back to ornament their humble and unworthy homes.

To this end, a subscription-list is being circulated among the five hundred First Citizens of this community; every subscriber of more than five hundred dollars receiving the assurance that a cast of his great toe will be used in the ornamentation of the outer face of the building.

A total of two hundred fifty thousand dollars in subscriptions having already been attained, the ultimate completion of the project is no longer in doubt.

Plans are already on foot to make a national celebration of the ceremony of Unveiling the Great Toes, at which many of our most able divines and attorneys will discourse on "The Reward of Worth-While Work," and kindred topics. Hundreds of Successful Business Men are expected to be among the audience.

This city certainly owes a vast debt of gratitude to Mr. O. B. Imo Rtal and also to his distinguished cousin the Begum for permitting the use of her name in announcing Mr. Rtal's wonderful accomplishment and its resultant offer to the public of America.

THE END.

Ich Dien—"I Serve!"

By Charles H. Mackintosh.

The Black Prince rode o'er Crecy's field,
His stallion stamping down the dead
'Neath brazen hoofs, while overhead
The startled vultures watched and wheeled.

On either hand his nobles ride
And here and there direct his glance
To where the ICHABOD of France
Lies written on the countryside.

And here a knight of noble birth,
With broken blade and shattered casque,
Rests from his stern and bloody task
Upon the breast of Mother Earth.

And there a mighty baron sleeps,
A flourish on whose silver horn
Had summoned to him yestermorn
The vassals of a hundred keeps!

And now the Prince with sudden rein
Has checked his charger in a breath,
For, in th' democracy of Death,
A KING lies sleeping with the slain!

Encircled by a ring of dead—
Despite his age and sightless eyes
He proved his kingship otherwise
Than through the circlet on his head!

The seekers find the monarch's shield,
So blood-bestained that scarce is seen
The simple motto of "ICH DIEN,"
The triple plumes on azure field.

Whereby they know Bohemia's lord,
The valiant Warrior-Statesman-King.
—Now swiftly to their Prince they bring
His fallen banner and his sword.

Lightly the victor voids his steed
And, stooping o'er the dead, he cries
"Happy that Prince who lives and dies
Within the Law of such a creed!"

He laid the sword beside the dead,
The banner o'er the broken breast;
But took the simple shield and crest
To bear—and live—them in his stead.

He served his country with the sword
As never Prince had served before;
(For these were times of bloody war)
And found in Service his reward.

Nigh half a hundred of his line
Have borne it since in camp and court,
And some have made it less than nought
While some have held it half divine.

And now WE claim it for our own,
Who follow in the Master's train
And know he does not serve in vain
Who serveth not himself alone.

We too may Serve, but not in strife
As in those days of fierce unrest;
Today he loves and labors best
Who serves us to the Joy of Life!

So we, who follow on the time
When men have grown of milder mien
Still write across our hearts "ICH DIEN!"
And know that Service is sublime!

How to keep your Hoist Happy

Dont's For The Runner

Written for "Steam Machinery"
by A. E. Holcomb

13. Don't show off while you have superintendents or strange visitors on the job. It doesn't pay.

14. Don't forget that a half round file and a monkey wrench make a good substitute for a Stillson.

15. Don't reverse the rotation of your crank disc when trying to put it on dead center, as the back lash will cause you to set the valves wrong.

16. Don't monkey with the eccentrics and valves of a new engine just to impress the boss with your knowledge of the proper functions of the different parts. The valves will be set right when the engine leaves the factory and should not be tampered with.

17. Don't bother the boss with unnecessary questions so as to make him take notice of you. The notice taken of a fool isn't flattering to him nor profitable to anyone.

18. Don't think that because you have never seen a thing that it can't possibly be so.

19. Don't be afraid to go out of your way a little to accommodate men on other portions of the work. Better and more work can always be done by pulling together than by trying to "Star."

20. Don't allow rust or dirt and excess oil to accumulate on your engine until it resembles a junk heap more than a serviceable engine. Keep it wiped up always and painted when necessary. It's dollars to doughnuts that the runner who keeps his engine clean will be found with a larger pay check, a cleaner shirt on his back and looking more respectable than the one who allows his engine to accumulate filth and grit that will work into the bearings.

21. Don't leave your tools lying around loose. Have a chest or other place for them and when not in use keep everything in its place. Then they can be found readily when needed in a hurry.

22. Don't waste the waste but keep it handy and *use* it.

23. Don't put away steel tapes covered with moisture. Clean and oil them first. A few minutes with an oiled rag will save future efforts with emery cloth.

24. Don't run the feed line from your horizontal boiler to the exhaust outlets of your engine cylinders and try to run the engine that way, for the steam will merely blow the valve back off of its seat and exhaust to the atmosphere without results. This probably sounds foolish to you but it has been done and the owners of the engine sent 500 miles for a representative of the manufacturer to tell him what was the the matter with the "durned thing."

25. Don't use lard oil on your engine either in the cylinders or for lubrication. It is a fine lubricant *if pure* but is then very expensive. The ordinary lard oil that can be readily bought almost anywhere at a price that is not prohibitive contains acid used in the manufacture that is detrimental to machinery. Use mineral oils.

26. Don't leave your hardoil can open for the dust and grit to blow in and then tell the boss the bearings of your engine or derrick are soft and cut too easy.

27. Don't expect a roller to roll under the skids when the same roller is being used as a fulcrum block for a pinch bar.

28. Don't expect to do as much work with dull tools as you could with sharp ones. It pays to take time to properly sharpen tools.

29. Don't when rebabbitting a bearing, pour babbitt into it until the bearing has been thoroughly dried out. If the bearing is damp when the babbitt metal is poured in, the result will neither be pleasant to yourself nor beneficial to the bearing.

30. Don't let your engine stand idle for a a time without putting on the stack cover to keep out the rain or snow until you are ready to fire up and use it again.

31. Don't stop or leave the engine of a double cage elevator idle without dogging the drum. Men have been killed by stepping on elevators that were not properly secured while the engineer's attention was otherwise engaged.

32. Don't start up your engine with the drip cocks closed. Before starting, blow steam thru the cylinder to warm it and clear it of water.

(To be continued.)

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FAMOUS LOGGERS

(Continued from Page 84.)

Fortune is a fickle Dame:—
Vic might well have lost his fame
But for her and one Reporter
—S. MacHinery by name.

Even he was forced to slip
Half the wisdom-a-la-lip
As it scurried thru the safety
On the Man from Missiszip.

Just one Think he caught and tied,
Threw it screaming on its side,
Took his kodak out and snapped it,
Snapped its picture ere it died!

Breathlessly, with beaded brow,
You demand the What and How?
—Shucks, there aint no use to tell you,
Everybody knows it now.

Epilogue.
What Milwaukee did with beer
—Yelled her name in every ear—
V. C. Langley did to Laurel
With his Low-cut Stump Idea!

HARDWOOD MEN AT MEMPHIS.

(Continued from Page 82.)

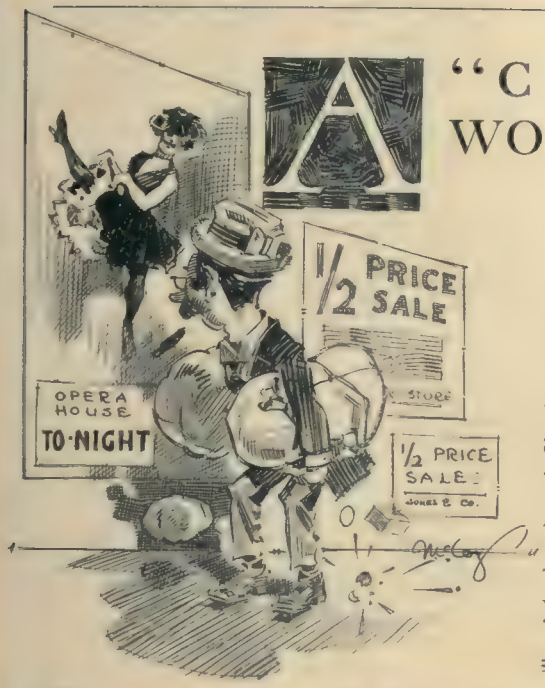
Clinton Crane, C. Crane & Co., Cincinnati, O.: Conditions over the country are so different that I do not see how the situation in one locality will be benefitted much by hearing from the other. But benefit will undoubtedly be derived in similar districts. You take the conditions of mountain logging, they are altogether different from those in a level country; and I cannot see where our association can hardly afford to take up the matter of telling a fellow how to saw his logs. The association has enough to do to keep the lumber inspection right.

R. M. Carrier: I have made no suggestion about this association doing anything. I am talking about members that are interested in logging joining the present logging association of which Mr. Boyd is secretary. I have not made any suggestion for our secretary to take up anything in that line. But Mr. Crane, do you say that there is nothing in common between your logging and my logging?

Clinton Crane: No, I think not.

R. M. Carrier: All right. They brought out down there—I was not there, this is what I heard—the matter of boarding your men. Now some showed a perfectly marvelous difference of cost per head. Suppose the question is discussed, "Do you board your men differently from what we do?" Is not that common ground to meet on?

Clinton Crane: We make everybody pay their own board. When you have a lot of fellows and you are boarding them, they do not work very much; but if they have to work to get a ticket before they can go to the dining-room, then they



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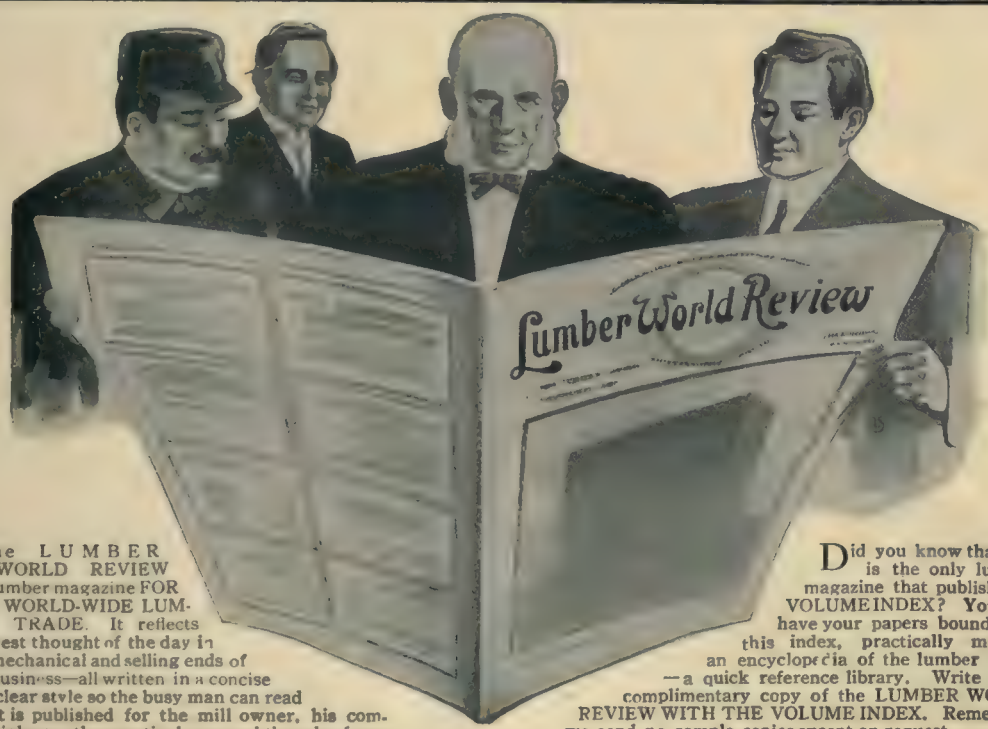

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work. They have to get a ticket before they go to the dining-room.

President Delaney: I see a gentleman in the rear of the room that recently went down into Louisiana to operate. He was one of those city fellows, accustomed to the electric lights, and so forth. I have no doubt but what he knows more about logging than he did before he went down into Louisiana. I want to ask Mr. Norman if that is not true?

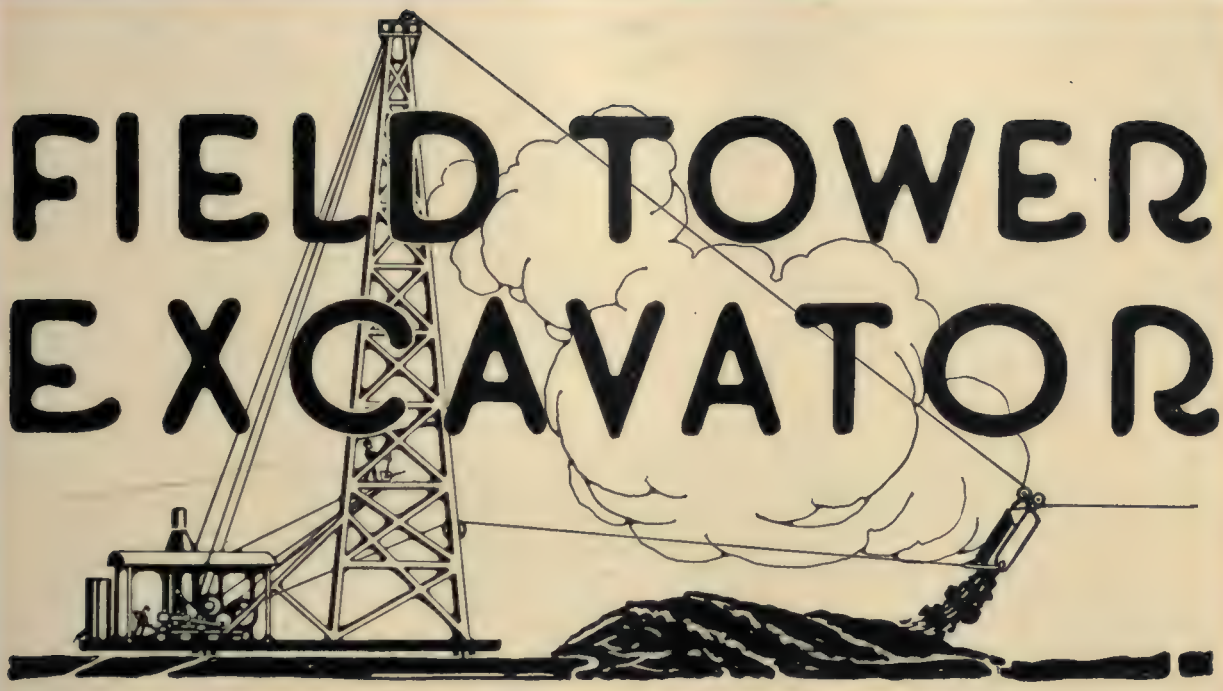
E. B. Norman, Norman Lumber Company, Holly Ridge, La.: Our logs are very largely delivered to us by a contracting company. As to the logging that we are doing on our own account I will say that we are a little wiser than we were. We have never been very wise; in fact, I think it will be a good while before we will be, because conditions are entirely different from those that we have had in Kentucky. I have been present at both of the meetings of the Southern Logging Association. We are members of that association, and we have derived great benefit from it. Both my manager and myself attended both meetings.

BENEFITS ARE GREAT

While it is true, as Mr. Carrier says, that membership is largely a combined membership, it seems to me there has been nothing that ever occurred in the hardwood business from which we could get the same benefit. I think that there is enough interest aroused in it now so that you will get greater benefits.

Logging in the South I find is pretty largely done by the class of men that Mr. Boyd has mentioned, who use main strength and awkwardness, and not so much science or brain; but there is an evolution going on in the logging business. We are passing undoubtedly from the oxen and the mule to machinery; and the intelligent operation of machinery is very different from hollering at Buck and Jerry. A number of the most wide-awake companies are taking this thing up, and I really think that they have been very much benefited. They not only send their logging managers to this association, but I think some of the proprietors themselves are in very great need of the information that they get there, because our logging with most of us is a hearsay proposition. We hear that it costs the other fellow $3 per 1,000 feet to do this or do that, and if we think it costs us only $2.75, we conclude that we are some "punkins"—tewnty-five cents better than that other fellow; whereas as a matter of fact the conditions may be so entirely different in the two cases that our cost should have been $2.25 instead of $2.75. All these things are being brought out in detail. I really believe that an investigation of the failures that I have known among sawmill people in the South if traced down would be found to have their origin right at the logging end of it. Most of us, I think, who come down to operate southern lumber business know something about a sawmill, but we do not know a thing about the logging end of it, and we have got a lot to learn. I believe that right in that association is the

FIELD TOWER EXCAVATOR



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place to learn it; at any rate, we are going to be students there.

President Delaney: Now let us hear from the real logger, somebody that has been in it. There is Mr. McCormick; let us hear from him.

T. B. McCormick, Carrier Lumber & Manufacturing Company, Sardis, Miss.: For myself I want to say that I went to that logging meeting and was very highly pleased. I am pretty well along in years, and have seen a great deal of this logging game; but I want to say to you that I got more pointers and learned more at that meeting than I think I ever learned in ten years' experience. I was very much surprised to find that almost everyone of those logging foremen or superintendents was there with the goods on them—they had the figures.

One little incident came up, I remeber. I guess Mr. Boyd can recall it. One fellow who spoke comparing prices on feeding men in camp. I do not know whether they made them pay their board. We pay our men so much a month and make them pay their board, but we board them. But that one man who talked beat everybody else there; and I noticed that about half of them thought it could not be done. But he was given a chance to come out with his figures ,and when he showed how it was done, everybody tumbled. Now he said, "The first thing I do when I make a camp, I put a couple of fellows, the barn man and roustabout, to work fixing up a piece of land, and I raise on it all my vegetables. They put in their spare time, so it costs nothing extra." Then he went on to tell how the fed their men. There was quite a discussion as to whether they furnished pie, and he said he did; but notwithstanding that he showed them how to cut the boarding bill in two. He provided the lumber and they had the ground for a garden. I cite this as one illustration, and the discussions were just full of those practical kind of thing. Some fellow would ask, "How do you load your rails?" And someone else would say, "Do you mean up and down, or just up?" "No, I mean yp and down.' And then he would tell how he did his work, and you could see at once how he got the best of it.

I think that every hardwood operator here would profit by going there himself and taking his superintendents with him. I know there is no queston about the benefit ,because you will get more practical ideas right there than you will get in a year any other way. They astonished me, the things that they showed us there.

J. H. Friant, Himmelberger-Harrison Lumber Co., Cape Girardeau, Mo.: Our logging proposition is different from most of the others. We do it all under contract; we do not maintain any camp of our own, but simply contract with the men who cut and deliver the logs to the tramroads for so much money. I have not any data with me to give you those figures there; but as a rule it costs in the neighborhood of $4 per 1,000 feet to cut our logs and deliver them to the tramroads. We then load them by the day and transport them to the mill with our regular engines. That is all day work. We do not maintain any camps, and the feeding of the men

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THE CENTRAL STATES CONTRACT REPORTER

315 S. LaSalle Street CHICAGO, ILL.

and problems of that sort are something that I could not tell you anything about. As a rule in our country I know that our contractors pay for soft woods from seventy to eighty cents per 1,000 feet for cutting the logs down, and about $1 per 1,000 for hardwood, oak and ash. That is about all the information that I can give you along that line.

LOGGING IN THE REDWOOD COUNTRY

(Continued from Page 76.)

There is a railroad paralleling the river on one side and the logs are brought by a temporary or summer bridge from the other side. At the point where the bridge crosses, the river is over one quarter of a mile wide, and the bridge is from 35 to 40 feet above the level of the water in the river at its summer stage.

The winter freshets destroy the bridge every year, necessitating rebuilding it in the spring before the commencement of the summer logging operations. This requires the use of about 300 pieces of piling, 54 feet in length, 10 inches at the top, and from 20 to 24 inches at the butt. The rail stringers and ties are removed from the bridge after the summer logging is done before the water carries the bridge away; but it is not worth while to attempt to move the piling as the salvage would not pay the expense.

Some of the shingle mills saw 400,000 a day. Often shingles have to be split to pack them. Waste lumber is sold cheap, at $4 a thousand, and is said to be a great deal better than some shipped from the East as first class lumber.

The finest trees split remarkably well. Houses are often built from boards split by hand from redwood logs. These split boards are from 10 to 12 feet long and from 12 to 24 inches wide; and they will not vary the sixteenth of an inch from one end to the other if split from a tree with a good rift.

California is the best redwood market and the lumber is taken in steam schooners all around the California coast and is also exported to Australia and the Hawaiian Islands. Within the past ten years the Eastern market has been invaded to quite an extent by the redwood lumber, this being especially true of the shingle market.

A great many millions of shingles are distributed annually from Humboldt and Mendocino counties, reaching as far East as Massachusetts, and efforts are being made to ship them into Maine. But the local product can probably be secured cheaper than from the redwood forests, ownig to the excessive freight rates. On 1,000 shingles the freight is $1.60 from Humboldt Bay to Maine.

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It will keep you posted on markets, *every week*.

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Ask for sample copy and further particulars.

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Has YOUR House Its "Herald?"

IN the bad old days, every princely and noble house had its herald to send on ahead to announce an intended arrival.

—Nowadays the "princely" and "noble" houses have been supplanted by barons of business and kings of commerce, but these still have their heralds.

—Often they take the form of advertising booklets, describing the house and its product in snappy, interesting style; so readable that the prospect is 99 66-100% positive to read them and *get posted in advance.*

—And so, when the salesman arrives, he finds his work half done!

—If *your* house has no "herald" as yet, our Service Department would like to suggest a plan for your consideration—absolutely without obligation to you!

M. I. STEWART COMPANY
Producers of Profitable Printing
Duluth, Minn.,
U. S. A.

Steam Machinery

Vol. 2. No. 4.

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A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

FOR THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER

Locomotive and Log Decks

Bowman-Hicks Office at Oakdale

Digging the Log Pond Driving Piles for skidway with McGiffert Loader

A SAMPLE STICK
of Bowman-Hicks Longleaf

(See "Horseless Skidding" Page 103.)

A Monthly Magazine of Men, Machinery & Methods

STEAM MACHINERY

DULUTH MINN.

Charles H. Mackintosh Managing Editor

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We absolutely and unconditionally guarantee never to publish in our columns advertising matter of a fraudulent or misleading nature, nor to accept copy from any firm whatsoever until we are satisfied beyond all possibility of reasonable doubt that such firm is in a position to live up to the letter of its proposals and has done so consistently in the past. This we do, not because we are better or more moral than other magazines of our day, but because we conceive the true purpose of a magazine to be service to its readers, and we would serve well in order that we may be well served.

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OUR EDITORIAL NEEDS.

"STEAM MACHINERY" wants and is willing to pay for the co-operation of its readers in editorial and reportorial work.

We want to keep abreast of conditions in the logging, contracting, excavating and railroad building worlds; giving our readers the first news and the true news about labor saving methods in their respective fields.

We want to know what the men behind the machines are doing to cut costs and increase efficiency in getting logs, moving dirt, laying and lifting track, caring for their machines and so forth.

We believe it will profit the men who are doing things to let us publish the evidence of their efficiency; we know it will benefit the industry as a whole to read reports which will have a tendency to increase practical knowledge and kindle ambition.

We know that the man who has these facts is not usually a writer, but we have plenty of pen-pushers who will attend to dressing up such articles for publication.

We want and will pay for the *facts*, without caring a cuss about the form they come in, just so our not-very-intelligent reporters can get the point plainly and work it into perfectly pleasing paragraphs for the printing press.

We will pay according to the value of the idea, such value to be judged by the amount of space our editorial staff finds it worthy to occupy, at five dollars the full three column page of ten point type, excluding illustrations, for which we will pay one dollar apiece.

THE PUBLISHERS.

The Editor Thinks

SCIENCE, with emotionless hand, has sternly wiped away all our rainbow-hued cobwebs from the mirror of Truth.

She has tried to leave us without a single miracle or shred of magic wherein to wrap the naked bones of Superstition.

All the long winter through men shake their wrinkled brows and ask if it can be scientifically demonstrated; but then, one stupendous morning, they wake up to find rule and logic torn to shreds and scattered over the lawn.

A pale blue wavering mist rises between the eye and the sun to throw a miraculous glamor over all the earth. Behind it, multi-colored tulips flame from the flower beds; tiny green shoots strain from the topmost twigs of heaven-aspiring oaks; countless chromatic feathered choiristers wing a maze of melody among the interlacing branches; many of these branches themselves have become a softened blaze of crimson and purple, white and pink and blue, all in the single magic night.

The greyest philosopher of them all skips blithely down his neat gravelled walk on this miraculous morning and there is a whole sonnet in his voice as he pauses to pass the time of day with a neighbor at the ornamental iron gate.

And as for Youth, you must stand aside in reverent laughing amazement and let it pass, for this is Youth's own especial season; sealed and assigned to it by all the sentimental symbols in Nature's own book of laws.

It is *Spring:* Spring the eternal miracle, when flowers and leaves, laughter and leaping cascades, melody, love and the joy of life are all re-born into the world.

The last tiny icicle dissolves to liberate its imprisoned rainbow and the whole wide world awakes from winter to plunge into the newly-warm waters of the Fountain of Youth.

Heaven cannot help that man who stands aloof and will not yield to the joyful madness; who feels no surging of new life thru his veins no rush of new old dreams and wonderful ambitions thru his brain!

Life comes anew to every living thing upon this magic morning, and only he who will not let it enter need go without his share.

It is our opportunity to re-charge the batteries of love and service at that great dynamo wherewith all Nature is galvanized again into optomistic energy!

—Spring, irresistable monarch of mirth and melody, your sublimely satisfied subjects salute you and pray that your madness may never grow less!

△ ⊢▽ ♂

THEY SAY THE FIVE SENSES are far better developed in lower animals than in Man and undoubtedly it is true.

But Man has a sixth sense which is peculiar to himself and which more than makes up to him for any lack of extreme sensibility in the original five.

This sixth is the Sense of Humor, from which pigs, oysters, monkeys, horses, saurians and all such insects are debarred.

Take the oyster for instance:—An oyster cannot take a joke. Even when

one mistakes the tabasco bottle for the tomato catsup it remains as dumbly unamused as a man finding his mother-in-law among the survivors.

Not that it refuses to see the joke out of plumb unnatural cussedness, you understand; the oyster is not to be censured for its lack of appreciation, which is entirely beyond its power of control.

Nature gave the oyster simplicity, beauty, succulence, a kindly, unsuspecting, unassuming personality and an occasional pearl, but when it came to fitting him (we have never met a female oyster) out with some cents of humor she found herself all out of coppers and hated to break a dollar.

In consequence, the oyster has been of a dolorous disposition ever since first he was chewed offen Cosmos.

It's the same way with all other plants, insects, reptiles, mammals and such, excepting only those which have been around Man long enough to imbibe somewhat of his cussed foolishness. The rest of 'em can neither make or take a joke.

Every man is born with a few sense of humor anyhow, tho' many lose them during the puerile period or get them warped all out of shape.

It seems to be another human prerogative to pervert things from their natural uses:—even this greatest gift of good does not escape from the polluting punch of the perverter.

The perverted humorist however is not always to be blamed for his atrocities of alleged wit. Most often it is his birth and upbringing which must be made to bear the blame.

There are lower orders of men just as there are lower orders among animals, but in Man the line of demarcation is mostly a mental one. Men with minute and muddied minds seldom possess a well-developed sense of humor, nor could it be expected of them.

Humor functions best in a keen well-balanced brain, quick to throw the shuttle of suggestion thru the threads of thot.

In a stagnant or sluggish brain it is bound to be ponderous and slow-moving; most often taking the form of verbal slapstick comedy or finding its expression in that last stage of its degenerate decay:—practical joking.

Practical jokers (or Deadly Fools, as they might better be sataned) are among the few surviving curses from our chrysalis state in civilization.

Not so many years ago they were paid a salary to dress in motley, creep up behind a bellicose baronet in riveted B. V. D.'s and smash him on the tin Derby with a bladderful of wind and dried peas. Whereat said bellicose baronet would bite the bars out of his vizor in his efforts to make the king (who paid his and the D. F.'s salary) and the rest of the court believe that he (the B. B. of course, not the king or the D. F. or the rest of the court who were all unanimous in the matter) believe that being binged on the canned bean with a bladder was just the *funniest* thing that could possibly happen to a man.

All of which was very acceptable humor in the days when men used water only on the garden and killed each other both for business and recreation.

Nowadays in among Mark Twain, Sunday Supplements, George Ade, Wallace Irwin, Judge, Life, Puck, Punch and other refinements, it is nix raus, Augustine, nix raus crossed out in red ink and scraped out with a Marswells desk knife.

The Deadly Fools of to-day should be anathema maranatha among all men of quick minds. They should have the ad-

verbial ending removed from their prefix; making them Dead Fools, even as many of their innocent and unsuspecting victims are dead. They should be invited to see a sawmill hog being fed and be tripped into and thru while watching.

They should be compelled to eat liberally of garlic before going to a Mardi Gras ball.

No fate, in fact, would be too bizarre or too horrible for these atavars among humorists, these baby brains butting in on Olympus!

Among them are the wits who put rusty pins in chairs, trifling with tetanus to raise a risky reputation (and a sudden sufferer.)

Then there are those whose ideal in irresistable comicality is to spring out from a dark corner upon a person with leaky heart-valves, shouting "Boo!"—In the "unfortunate ten-per-cent" of such cases the coroner is supposed to bring in a verdict of "Died from failure of the sense of humor."

It would be a hopeless task to catalog all their degrees of deadliness, however: their name is Legion.

Boat-rockers, explosive-cigar-fiends, gun-pointers, hat-smashers, ammonia-squirters, etc., etc.,—their hydra-headed perverted humor confronts us at conventions, in camps, at seaside resorts, at home, on the streets, wherever two or three are gathered together to form a more or less apprehensive audience.

We have so many Societies for the prevention of things that perhaps a "Society for the Prevention of Practical Joking" would be ineffective in securing curative legislation.

In any event prevention is better than cure and prevention can come only from taking their poor little warped brains and developing them up to the point where a true sense of true humor will find them habitable.

YOU CAN BUY SERVILITY but you must earn service. The world has too few sincere servants to loan them to the undeserving; they are needed for greater things than to aggrandize the avaricious and amuse the mammonites.

The Florentine, Da Vinci, stands among the centuries a shining example of one who was well worthy to be well served. A master of his Art, he did not fear to use his influence and fortune to advance the skill and success of countless other aspirants, any one of whom he knew might come to divide the honors with himself. Self was subverted to splendid service and so his name shines among the great ones of the earth and will shine while beauty in color and line retains her ancient sway over men's minds.

God is very good to that generation in which a Da Vinci is born and the good does not die among his contemporaries. There are no waters of oblivion with which to wash out the touch of a sincere and splendid servant upon the ages. Nor death nor time nor changing men and manners can do that. Even the work itself may die and yet the inspired spirit live among all men thru all time, moulding the aspirations and the achievements of a thousand unborn generations.

So may we live, in greater or in lesser degree, who gain the greater courage to forget ourselves in service, simple or splendid, but always sincere.

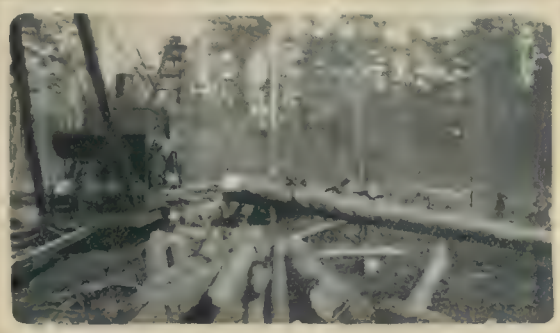
He serves himself best who serves others more; he serves himself worst who serves others less, for ours is a crowd civilization with a community of interest wherein an ego is only an opportunity to service.

HORSELESS SKIDDING

As Demonstrated at Oakdale, La.

by Bowman-Hicks Lumber Co.

Transcribed *for* "Steam Machinery" by ye Editor Himself.



LESS than twenty years ago people were telling each other how idiotic it was to think that you could run a buggy on benzine and fan the unjulate into the discard. Ten years ago they would stand on the corner when one such horseless carriage hove in sight and watch it—for about twenty-five minutes by the keywinder—until it passed around the curve beyond the meat market.

Now they don't even cuss when sixty, going in oposite directions at eighty-three miles an hour, miss their vermiform appendices by the one-thousandth part of an inch.

No village so small or so remote as not to own its couple of Ford's: no villager so unsophisticated as to jump more than three feet at the sound of a Klaxon horn.

Thus the times change and with them men and their manners.

S. MacHinery's memory need only trail back a year or so to hear the positive "Pooh! Pooh!" given to the horseless rehaul skidder, and yet they are already getting to be as common in the woods as chiggers.

For the real "horseless" logging operation however, one must take the T. & P. from New Orleans to Alexandria, get a bountiful breakfast at the Bentley (a hotel which would be a credit to a city of a hundred thousand folk) and catch the Iron Mountain for Oakdale, La.

Here they have the Bowman-Hicks Lumber Company and here the said B.-H. Co. have the original horseless skidding operation.

The Scribe got into Oakdale on the Santa Fe from Elizabeth on the night of February 19th—the night of the Big Blaze—and secured a grand-stand room at the Hotel Stovall.

About two in the A. M. he was aroused from slumber by the Constitutionalist Army driving in the outposts and opening fire on Oakdale with machine-guns, derringers, forty-five and other weapons of defensive offense.

Hurriedly throwing up the shade, he discovered that the above nightmare was caused, in fact, by a tremendous conflagration just across the railroad tracks from the hotel; to which the citizens of Oakdale were calling attention by firing off fifty thousand rounds of ammunition per foot second.

Half-a-dozen business blocks in the heart of town were belching flame-shot smoke into the clouds, turning night into day and day into Inferno.

Every now and again a barrel of gasoline would fall in the path of the flames and a terrific detonation would follow, while a cotton-wooly cloud of opal-colored gas and flame would shoot up hundreds of feet into the air.

The Scribe lay in bed and watched the whole thing, feeling much like Emp. Nero at the destruction of Rome and lacking only a slide trombone or a jew's harp to complete the illusion.

After the fire was pretty nearly burnt out, the sawmill sirens began to blow at intervals for an hour or more, so that sleep was largely a minus quantity that night.

In consequence the Scribe overslept himself next morning and had to go rustle a breakfast in the downtown district.

After which he bent his steps toward the true subject of this article—the plant of the Bowman-Hicks Lumber Company.

The mill is right on the outskirts of Oakdale, about a mile from the hotel, the approach to it being lined on both sides by handsome and commodious dwellings each with its lawn and garden.

These, as the Scribe ascertained later, are the homes of Bowman-Hicks employees, rented to them by the company on a most moderate scale of charges.

There are a hundred and eight of them altogether, fifty-four being for whites and the same number for negroes.

Three, four and five room bungalows with spacious porches, electric lights and piped deep-well water can be rented at from $6 to $12.50 a month, each having sufficient ground to accommodate a fine flower-garden and lawn in front and a profitable truck-garden in the rear.

For colored employees there

Bowman-Hicks' Main Line.

are comfortable three-room cottages with two big porches, all fifty-four of them made on the duplicate part system, probably with standardized jigs and templates!

Altogether, the company provides ample accommodation for three hundred men which is about the average working-force of woods and mill.

They maintain no woods camps, bringing everyone in to town every night with the exception of two night watchmen left on the logging machines.

Fully eighty per cent of the white employees are married men—most of whom have been with the company for the past ten years—and no doubt their "better halves" greatly appreciate an arrangement which thus preserves and encourages true domesticity in their hubbies.

Logging is now going on about three miles from town, entailing a very short journey to and from work. It is part of the duties of the night watch-men to get steam up on skidder and loader so that the men can go to work as soon as the train brings them out to the woods.

The workings of a horseless logging operation were revealed to the Scribe by Mr. B. M. Musser, General Superintendent for the Company, and were certainly a revelation in efficiency.

The band-and-circular mill turns out one hundred thirty-five thousand board measure feet of lumber a day, requiring some hundred and a quarter thousand feet of logs.

Every foot of this is skidded with one four-line Clyde skidder equipped with mechanical rehauls and loaded with one quarter-swing steel boom McGiffert loader.

Baker Becomes a Boss Buyer

PRESIDENT OF THE S. L. A. NOW PRESIDES OVER DESTINIES OF PELICAN LUMBER COMPANY.

◆

J. B. Baker, President of the S. L. A. ever since its inception, has retired from active participation in the affairs of the Huie-Hodge Lumber Company to assume command of a new company, to be known as the Pelican Lumber Co.

This new company is located at Ruston, La. and is incorporated for the purpose of handling lumber on a wholesale basis and buying stock for manufacturers and for the trade.

Mr. Baker is general manager for the new company and may be trusted to carry it to success with the great fund of energy and initiative he has so often revealed at S. L. A. conventions.

The best wishes of all his friends—and their name is Legion—are with him in his new field of endeavor.

—May he go on and prosper!

Four-Line Clyde Rehaul Skidder.

They had been using this equipment just a year at the time of our visit and haven't used a horse on the operation in that period.

J. M. Anderson is in charge of the skidder and averages two hundred logs to the line; logs averaging thirty-two feet in length, two hundred feet (L. M.) to the log.

It is seldom necessary to run more than three lines, holding the fourth in reserve.

The average cost of skidding for the year 1913 was forty-nine cents a thousand.

Fifteen men are employed about the skidder, including two men to furnish pine-knots for fuel.

All three lines go back about five hundred feet, which they have found to be the most economical skidding distance, having run as far back as a thousand feet when conditions required.

The skidder has a decking line for each skidding line and all logs are decked beside the track ready for the loader.

Bob Havens, in charge of the loader, employs six men about his machine, including a wood-rustler.

He loaded all last year for an average 22c a thousand feet, cutting this to 20c for the month of January 1914.

The loader is run only twenty days a month, easily handling all the logs the mill can cut with a surplusage against contingencies.

Mr. Musser states that this one machine will easily load two hundred thousand feet a day right along if necessary, which implies good timber and skillful handling.

Mr. John Denning is in charge of the woods operations and en-

SHAW OPENS OFFICE

A. M. Shaw, author of the able article in our January issue on the Reclamation Project of the New Orleans Lakeshore Land Co., has opened an office in the Hibernia Bank Building, New Orleans, La., as consulting engineer.

His field will cover the preparation of plans and estimates, valuation or supervision of construction or reclamation projects and steam and electric railways. Wherever desired he will be prepared to furnish complete construction organizations.

He proposes to pay especial attention to the drainage of swamp lands and sea marshes in which his experience with the New Orleans Lakeshore project should prove invaluable to him—and to his clients.

Mr. Shaw is a member of the American Society of Civil Engineers and of the Louisiana Engineering Society; he is recognized as one of the most promising men in his profession in the South.

—The Staff of "Steam Machinery" unites in wishing him favorable fortune and fair weather for his new enterprise!

Mill and Log Pond

Planing Mill.

The Company's Commissary

4 Room Bungalow

4 Room Cottage

Swing-Boom McGiffert Loader.

deavors to keep the loader well up with the skidder, both being about a million feet ahead of the mill.

Mr. Musser is a great believer in good railroading: his six miles of main line and his spurs being able to stand up alongside of the main line of many cross-country railroad systems and come out first-best!

Fifty-six pound steel is used throughout and the track is well and carefully graded and ditched. All ties are hewn from heart-timber.

The total cost of the railroad operation is 60c per thousand feet, of which 50c must be charged to laying and relaying spur tracks.

Thirty-six skeleton cars forty-four feet in length, in three trains of twelve cars each, handle the logs between woods and mill. Four locomotives are used, one of which is gear-driven.

Slabs from the mill are used as fuel on all locomotives, a conveyor from the mill depositing them direct into a wood-box beside the track.

The mill is run entirely on its own sawdust, while the logging machinery subsists on pine knots. Thus the only expense connected with fuel throughout the operation is that of labor in handling.

The mill pond is of the semi-excavated type, all earth taken from it having been used to form six-foot levees all round.

It is interesting to note that the piles for the skidway leading to the mill from this pond were driven by the McGiffert loader, temporarily disguised as a pile-driver.

Mr. Musser did not mention whether the same machine was used as a drag-line excavator to dig the pond and build the levees, but there is no reason why it should not have been.

The Company owns twenty-five thousand acres of long-leaf yellow pine, all situated south of Oakdale and all readily accessable to the mill.

They run their own commissary in competition with the Oakdale stores and get nearly all the trade, strictly on the basis of quality, price and service. There is no obligation on the employees to deal at the company commissary, everybody being paid in real money every Saturday night; they do it, however, because they have found it worth-while in terms of dollars saved. When it is considered that Oakdale is a town of five thousand people and is amply provided with stores, this speaks volumes for the efficiency of the company's commissary manager, Mr. Allen.

Oakdale has fine schools and churches and is now planning the erection of a forty thousand dollar high school—altogether it is quite some town even after the big fire!

Company employees go to one or other of Oakdale's two churches and send their children to the Oakdale schools, but the colored employees have a perfectly good church of their own recently erected for them at the company's expense. They take turns in the pulpit.

The Scribe was not privileged to meet Mr. W. C. Bowman, President and General Manager, or Mr. Geo. R. Hicks, the Vice-president, during his visit, both gentlemen being absent on business; but this was the only blot on an otherwise entirely satisfactory and profitable trip.

Famous Loggers
in Picture & Pome

Done under Protest for STEAM MACHINERY by

OSCAR MARSAN
CZAR OF THE CYPRESS SWAMPS

When you meet him in the city,
He is swagger, he is witty,
And you really couldn't tell him
From a thousand other folk,
'Till he gets you in the lobby
All alone and mounts his hobby,
When you suddenly remember
He's no ordinary bloke!

And you picture, as you listen,
How the cypress, all a-glisten,
Throngs the forest aisles at Clio
(Where his operations are)
There the muckamuck of Russia
Is a piker and four-flusher
When compared with "Cypress Marsan"
Who's a Czar what *am* a Czar!

C. HENRY

FAINT ECHOES *from the* Y·P·M·A· CONVENTION

DONE INTO SCRIPT BY S. MACHINERY·
WHO WAS RIGHT THERE

WHEN it comes to "news" stories, the reporter on a monthly magazine like "Steam Machinery" compares with the weeklies even as a Mexican half-dollar with a genuine U. S. bone:—he is seventy-five per cent minus!

Take for example this convention of Yellow Pine People they held in New Orleans on February tenth, eleventh and twelfth. Here it is April already and, so far as reporting what happened, we are just waking up to the fact that there *was* any such animile.

And yet S. MacHinery was right there, handing out back copies of the little old magazine just as they used to slip you tracts when you exited from poison-parlors in the good old days of last century.

However, they tell a story about a bunch of British bricklayers rolling down Cheapside arm-in-arm, all of 'em ready to bust wide open with laughter.

"W'at's the bloomin' joke, maties?" ses a blighted British "bobby."

"Woi," ses the spokesman, "Yer knows that tall buildin' hacrost ther road from ther Benk?—W'en we passes hit a few minutes hago hit was hall hafire hand there was hold Bill hon top hof ther bloomin' buildin', darncing haround hand 'ollerin' like mad."

"We shouts ter 'im, "Jump, Bill, jump, hand we'll catch yer hin ther blanket!" and Bill 'e jumped!"

"Well, wot's ther bloomin' joke?" pressed the bobby as the bunch again burst into boistrous mirth at this point.

"Bust me buttons," ses the spokesman feebly, his hands to his sides, "There *wornt* no bloomin' blanket!"

That's just the way it's going to be with this "news" story—there haint no bloomin' news in it!

—These Yellow Pine People don't care any more about the anti-third-term-wasp than if she were a harmless lil fuzzy caterpillar. Just to prove it they went right ahead and re-elected S. J. Carpenter of Jacksonville, Fla. as their president for the third straight.

Of course they couldn't get a better man if they combed the continent with one of those combs Sister Susie uses on Fido after his bath, but just the same it's setting a dangerous precedent with Teddy only a few thousand miles away.

We have had Nand McRally draw a topographical map of President Carpenter's features and present it here for your admiration.

After the President's annual address, in which he hewed straight to the line, Secretary Smith (who was also re-elected) presented some interesting figures on yellow-pine production during the past year.

He brot out the fact that 1913 laid over 1912 by a mere trifle of three-quarters of a billion board feet; a total which, even when done into dollars, scarcely equals the Scribe's daily expenditure for alleged cigars.

Partly in consequence of this astronomical increase in production, the Yellow Piners will have in the neighborhood of a quarter of a million gold dollars to help carry on the good work during 1914. This should pay the secretary's salary with a little something left over to follow up the line of talk handed out by Adman Shuman.

Here is a man who actually believes that all advertising-done-with-grey-matter is good and that trade-paper advertising (also when done with grey matter) is better.

Five pertinent paragraphs ripped from his remarks are herewith introduced as evidence:

"The man who treats a trade journal publisher as a respectable mendicant to whom something must be given—who looks upon trade journals merely as institutions which must be supported for the good they do—misses the whole point of the thing.

"Trade journal advertising is not digging down and giving money; it is reaching out and getting money—reaching the minds and hearts and pocket books of men who have money and who want to make more money out of that money by spending it for your products.

"The value of any publication may be determined by the following formula: Value equals circulation multiplied by buying power, divided by rate. And to determine the buying power of the readers of any journal you need only to visualize the audience it reaches, imagining, if you will, that they are all seated in a great auditorium, and

that you, by the grace of the publisher, are permitted to mount the platform and talk your business to that vast, multi-million dollar audience.

"Any man of you who gets that true conception of the trade journal as a great central market-place to which its readers may go, money in hand, will stop giving the publisher little standing cards, because they like him as a man; will see beyond such small personalities and will sense the tremendous buying power of the audience he offers, and talk to that audience with such compelling force that they will read and remember and respond.

"Trade journal advertising is not a contribution—not an expense; but, rightly done, is a sound and paying investment that yields dividends far beyond its cost."

—Of course the point is that it must be rightly done; the author of this report hopes to live long enough to see a real advertising campaign conducted in the columns of the lumber trade-press, but the doctors cannot promise him longer than half-a-century more.

However the lumberman has ways been pretty well wropped-up in turning out good lumber and lots of it, almost too much so for his own business-health it would seem.

—President Carpenter in the course of his remarks gave vent to the following: "The fact that one-half of our product should have been sold below cost of production, with the consequent loss both to capital and labor and to future generations by reason of forest waste which always goes hand in hand with cheap lumber, is an unsatisfactory reflection on our merchandising ability."

Judging from subsequent results, this confession seems to have impinged on other ears than those of S. MacHinery with equal force. Right after his return to the Zenith City of the Insulted Seas, he received the following from an anonymous attendant at his same session.

We hand it to you here, deprecating its sarcussedness of course, but believing there may be a kernel of truth in command of so solid a regiment of seeming facts.

Dear Mac:—

The more I see of these lumber manufacturers the more respect I have for the business foresight of the butchers. That's a pretty strong statement, but I can't help saying so. The butchers have been charged with many and heinous crimes in the past, but they get their money's worth out of the hog or the cow or whatever they may be butchering and you have got to hand it to them. The cause of my dilating on this rather irrelevant subject is something I heard in New Orleans a few days ago. I happened to be in the city and with not much to do I dropped in on the meeting of the Yellow Pine Manufacturers' Association. Just as I dropped into my seat I heard the President, the Hon. S. J. Carpenter, dolefully deprecating the fact that the yellow piners were obliged to sell 55% of their product below the cost of production,—think of it—55%. As the sorrowful Samuel uttered these words all the mourners bowed their heads,—and yellow pine dropped off another dollar. (The backbone of these yellow piners is marvelous.) Well to go on, the rest of what the President said was lost amid the weeping of the mourners,—and my own laughing. Why, Mac, it was funny, in fact almost ludicrous. 55%, why I wanted to get up and tell them about the butchers, —or should I say meat packers. I wanted to tell them about these fellows who sell 100% (not a paltry 55%) of the main product below the cost of production, —and who don't have to walk or ride in street cars either. Think of it, 100% below the cost of production. They wouldn't have believed it. Mac, —not a word. They can't savvy such things. It is beyond them, —years beyond them. They are still on the caboose. Their fathers and forefathers made only lumber out of a tree and why should they make any more. No reason at all. And mark my words, Mac, they will never do it until they are forced to, and it will be hard work then. The forcing hasn't got here yet but it is coming faster than most of them think. And what are they doing to ward off its coming? Spending a few paltry thousands trying to tell pople that lumber is as good or better than some substitutes; which they (the people) already know. Funny, isn't it? and the first thing that you or I or any sane man would think of doing is to make more money out of the raw material —and not think about it, but do it. Turn some of the waste into turpentine and tar and charcoal, some into pulp and paper and some into producer gas for power purposes and so on. But they won't do it yet awhile, Mac, no, not yet. When the 55% grows to 65% they will think more about it but not until it reaches 75% or more will they do anything, and some of them not even then if they can figure their stumpage in at 25c (what it cost them) instead of its real value.

But Mac, why don't they do these things? Why? It's long been a puzzle to me. I haven't found the answer yet. Is it because they aren't capable, or is it due to their fundamental education? Let's think it over a bit. Compared with most of the industries, they have had an easy time getting the raw material. Nature grew it and placed it all over the country. She didn't bury it like she did coal and iron and lime, etc. How about the manufacture? That's easy too. A saw and some power did the work. Nothing like the difficulties of steel manufacture. How about the marketing? Easiest thing in the world—Wood was and is the best and cheapest building material on the face of the earth, and it never knew what competition was until recent years. So you see Mac, the lumbermen never did have a hard time, And now what is the result? They have been at the old game so long they can't see anything in the new,—and some of them wouldn't if they could. Who ever heard of a lumberman quoting a thousand feet at $21.02! It's always on the even dollar or the half, rarely on the quarter. The point is Mac, they think in dollars ininstead of cents. You go to the steel man and say you can save him 5c a ton in his waste pile

and he throws his arms around your neck, but go to the lumberman and say you can save $5 in his waste pile and he says "You don't say so—Well of all things," and then tries to tell that a wooden house will burn slower than one of concrete. Mac, these fellows are the limit, they haven't got the sense of a green apple.

The great cry now is "the substitutes are upon us,—let's advertise and beat them." Nonsense, with the few dollars these lumbermen propose to put up they couldn't beat a drum. They will fuss and fume a lot but little good will it do. They are beaten before they start. They might do something if they would put up enough money and if they would follow up the advantages of their advertising but they don't know the game, Mac, and they will get but little benefit from the money they spend.

Now, Mac, it isn't fair for me to pass out all this destructive stuff without handing out a little constructive dope. So here goes. There is only one way to beat this substitute game, and that is to make enough out of the raw material so you can sell the lumber (all of it, if necessary) below cost and so much below that the substitute will no longer be a menace. This may sound a little radical, and many will say it is not the solution to the problem, but you tell those fellows to show a better way and then I'll shut up.

In the first place, Mac, when you come to think of it, it is a doggone shame these lumbermen take so little out of their raw material. Now words sound nice and I realize a lot of misguided but perfectly sincere conservationists have been talking this way for years, but let's get down to facts or brass tacks. On an average acre of yellow pine timber land, an average lumberman will take off logs which will give him at the mill about 12,000 feet of lumber. He will sell this lumber at an average price of $15. which gives him a gross value for the product per acre of $180. From this he gets a profit of almost $50. But in doing this he leaves in the woods and at the saw mill the following:

About seven (7) cords of top logs and other refuse which should produce six tons of Kraft paper at a value of $65 a ton, or a total of $390 per acre.

About twelve (12) cords of sawdust and other mill refuse which can be made into ethyl alcohol with an average selling value of $5.50 per cord, or a total of $66 per acre.

About ten (10) cords of stumps and other fat material which can be manufactured into distillation products having a value of $15 a cord, or $150 per acre.

Now $180 plus $390 plus $66 plus $150 equals $786, the gross value of all the products *which can be manufactured from an average acre of yellow pine* and the dear old ladies, Mac, take off only $180 worth or less than 25%. Sad, isn't it?

Now right here if any of the old girls happen to read this the first thing they are going to say, or rather the first two things will be, "Well just think of the big investment required for all these by-products plants" and "These gross figures are all right, but how about the profits?" All right, Mac, let's show them. A yellow pine mill cutting 250,000 feet in 24 hours will clear about 20 acres a day. To consume all the waste on these acres and at the saw mill will require a 140 cord pulp plant, a 240 cord alcohol plant and a 200 cord distillation plant. All of these could be built in most cases for about 2-3 of the investment already put in the timber and saw mill of a plant cutting 250,000 a day and having a 12 years supply of timber.

And now profits—the paper plant, the alcohol plant and the distillation plant should show a profit of at least as much as the lumber, and in many cases if handled properly, considerably more. In fact, Mac, in figuring this thing out I am simply amazed at the possibility of profit in the many operations. But suppose I should show all these details to the old ladies, what would they say? Nothing but, "You don't say so, well of all things!"

Yours truly,

SANS GENE.

—Now isn't that the peevish epistle? But perhaps there is a sufficient quantity of veracity in it to appeal to the logic tanks of some among our readers.

Personally we don't know two things in the whole world about it—we just give it to you for what it's worth!

And here, also, the last faint echo from the 1914 Y. P. M. A. convention dieth away upon the evening breeze:—We have done!

THE END.

Texan Tetrameters

Perpetrated Particularly For
STEAM MACHINERY
by

S. MacHiner

A Remarkable RAMBLE Rendered into Rotten Rhyme *by our* Reporter

Now first I sing that Texan town,
Foremost in fortune and renown,
Known to the world at large (and small)
As HOUSTON, Mistress of them All!

The Queen of prairie cities, she;
Throned on the prairies wide and free
O'er which the saline breezes blow
From the great Gulf of Mexico.

I came, I saw, and, conquered quite
Prepared this praising pen to write,
Sticking to starkest truth this time
(Excepting where I need a rhyme.)

New Orleans, on the Mississip,
Was whence I started on this trip:
'Twas there I caught the Sunset Mail
And sat upon its scenic tail.

I knew you traveled just one day
But didn't know where Houston lay,
So put it up to the S. P.
To find the bally place for me.

And did they? Well, you bet they did;
They knew *exactly* where she hid:
They tracked her down thru swamp and park
And caught her, neatly, in the dark!

I grabbed my grips and climbed aboard
The relics of an early Ford
Which feebly coughed, as tho' in pain,
Lay back and went to sleep again.

The driver cursed a crimson'd stream
But still she slept and seemed to dream,
What time we nearly bust our backs
Pushing her off the street-car tracks.

Perspiring peeves from every pore
I grasped those weighty grips once more,
Signalled an Oakland just ahead
And left my driver with his dead.

Swifter than swiftest pen can spell
I found me at the Rice Hotel—
A seventeen story stone-brick block
As up-to-date as any clock!

They showed me to a pink boudoir
Somewhere upon the thirteenth floor,
Pulled down the shades, turned on the fan
And left me with that Morpheus man.

Next morning rising with the sun, (?)
I sought the room of Francis One
Where young briquettes of woven hay
Stocked me in fuel for half-a-day.

Then fed and fluffed and debonair
I sought the ambient outer air—
So torrid 'twas, I thot to wilt
Seeking yon house that Carter built.

'Tis meet that I remind you here
This was the *first* month of the year—
And warmer than the summertime
In S. MacHinery's native clime!

O' city of the sacred name,
Back to the sticks from whence you came!
O, pride of Georgia, turn and flee
With all the towns of Tennessee!

Ye coastwise cities white and proud
With tall spires tangled in a cloud,
From shore to shore, from sun to sun.
Go seek you such another one

As Houston, and you must concur
That He, or They, who sculptured her,
Almost before the cast grew cold
Burnt up the forms and bust the mold!

What tho' some census simp in joke
Gave her scant hundred thousand folk:—
It needs no second glance to guess
A quarter million and no less!

—These many years, in boat and train,
I've wandered over sea and plain,
Yet never mirrored in mine eyes
A bigger city of her size!

I pass the point, nor hope to tell
You misbelieving folk who dwell
In other cities, which *you* think
Put Heavenly Houston on the blink,

How swift these Texan cities grow
Beside the Gulf of Mexico!
—Because this fact must stand confest
A man's *home* town is always best.

Now pardon for a moment, while
We introduce one, Archie Kyle;
Whose chiefest claims upon us are
His driving and his Mercer car.

Confined within its power plant
Sixty unbusted bronchos pant
And bear their tiny two-ton load
Like lightning, down the long white road.

'Tis fifty miles to Galvez' town
And yet said Mercer took us down
In scant two hours, including stops
To argue with the motor-cops.

Now Galveston has much to boast:
Her famous U. S. army post
A bathing beach by none surpassed,
The Hotel Galvez—best and last.

Before said caravans erai
We left our chariot, Kyle and I,
Put hats and hair and neckties straight
And wandered in to irrigate.

A lemon-selzer caught the Scribe,
Lord knows what Archie *did* imbibe:—
Judging from what I now relate
It must have been a whisky straight!

The Scribe had brot his V. P. K.
To take whatever came his way,
And, strolling thru the grounds outside,
A splendid subject Archie spied:—

Two baby-buggies, side by each,
Headed for boulevard or beach
Wherein (and here the jest begins)
He recognized the Kewpie twins.

"Say Mack., I'll tell what we'll do!—
Let's take a picture of the two
Just as the precious darlin's are,
And flabbergast their lovin' ma!"

Next this misguided friend of mine
Scared the two nurses into line,
Propt up the children one by one
To face the kodak and the sun.

Altho' I took their pictures—gee,
They didn't look like twins to *me*,
For one was old and badly soiled,
The other new and still soft-boiled!

Once more the welcome bar we sought,
With Kyle up to his neck in thought
Whence he emerged with "Shades of Saul,
Those weren't the Kewpie twins *a* tall!"

Well ish ka bibble shouldn't I,
With such a chance to make him buy
A Ritter dinner for the two?
—Yes ish ka, which is what I do!

Do you know Ritter's, reading friend?
—It is the Omega, the End,
Of Culinary art and grace—
A peerless and Olympian place!

Seek you no gauds of silk and gold,
No classic marbles, stern and cold,
No beveled plate, no gilded seat,
No Music murdered while you eat.

But you shall wonder, when you've dined,
What Chassanol and Ritter find
To buy that ever can compare
With what they sell and serve you there!

If, from Oblivion where they dwell,
Jove and his gods should chance to smell
The savor of a Ritter duck
How they would weep and curse the luck

That fed them nectar, coarse and crude,
And weak ambrosia badly brew'd
When, had they known this year of grace,
They might have dined at Ritter's place!

Well, let it pass—the gods are dead—
And Nero too, of whom 'tis said
He loved to drive at lightning pace
Four equines in a chariot race.

They say he used to make 'em go
Some twenty miles per hour or so:—
But Kyle and I, returning home,
Wiped the shell road with shades of Rome!

How Nero with his four-horse bus
In spirit must have envied us!—
How many talents would he pay
To Mercer down the Appian Way!

Perhaps 'tis better, just the same,
He died before the Mercer came;
Else had some Roman wuxtry read—
"A Fatal Joy-Ride:—Nero Dead!"

(*To be concluded in the May issue*)

OVER THE AD-MAN'S DESK

On Building and Changing Men's Minds.

Man needs but little here below, but he can be made to *want* a great deal. It's all a matter of judicious publicity.

Left to his own initiative, the ordinary man would follow closely in his father's footsteps without indulging in any daringly original flights: he would be content to obey custom rather than to do his own thinking. Thus advertising becomes the process of doing men's thinking for them; of painlessly inserting ready-made thoughts and desires into their cerebellums.

Just because men's minds are so receptive to suggestion, an advertised article has a tremendous advantage over its unadvertised competitor, even tho' the unadvertised may be vastly superior for the intended purpose.

So many lumber substitutes are advertised so much and lumber itself is advertised so little that there is no room for wonder that vast inroads have been made upon the lumberman's legitimate and formerly uncontested markets. It is equally natural and certain that these inroads will continue and expand until the lumber industry either wakes wide open or loses its proud position among the country's commerce.

Lumber advertising to the ultimate consumer at this stage of the substitution campaign must be handled with great diplomacy. Remember that the presumptious and prejudices voiced in competitor's copy have become, to a very great extent, the presumptious and prejudices of the purchasing public, for this is the primary function of advertising.

—A man who never chewed gum in his life will tell you that Wrigley's Spearmint is the best on the market.—A man who would as soon think of cutting his own throat as of shaving himself will still refer to the Gillette as the best of safety razors.

We live in a day of readymade shoes, readymade hats, readymade clothes and readymade thoughts: but because a man takes his thinking readymade do not think that he will give it up as readily. When a thought has once been accepted it becomes a part of its recipient's mind—when you attack it you attack him.

It is practically impossible to forcibly substitute one idea for another thru advertising. The substitution must be done, as was the original, gently, almost imperceptibly; it must follow the line of least resistance.

When you tell a man that lumber is less inflammable that steel and concrete you run head-on into a whole section of his preconceived prejudices and are set down promptly as a pusillanimous prevaricator.

Tell him, on the other hand, the what and why of fireproof lumber construction; comparing a few pictures of slow-burning fires in such buildings with pictured holocausts of crumbled concrete and tangled steel, painlessly changing his mind for him.

Logic is the great lubricant when it comes to turning a man's mind over: his mind will follow peacefully where it is lead but will inevitably fight back when it is pushed.

Persistency and personal conviction are the two great necessities to a successful advertising campaign.

People are too busy about their own affairs to become interested in yours except you keep right on telling them why they should be interested.

On the other hand, they will never believe what you say in sufficient quantities for you to realize a profit on saying it unless you yourself believe it absolutely and say it sincerely.

Insincerity is like a drop of absinthe in a cocktail—it will unmistakably flavor the whole and none but tasteless or brainless boobs will fail to notice it.

Let your consumer copy be simple, logical, sincere, and consistent and then *continue* it without losing courage in your own convictions:—thus is successful advertising arrived at.

THE END.

A Department Devoted to Questions *of* Profitable & Unprofitable Publicity

"Morning or Mourning *for* Mexico?"

—It Depends on whether or no the American people will force their President's hand:—or so it seems to Charles H. Mackintosh.

"We don't want to fight
—But, by jingo, if we do
We've got the ships, we've got the men,
—We've got the MONEY too!

THAT'S how it goes—the old Jingo Song from the Turco-Russian war of 1877. It really is a fairly faithful X-Ray picture of the interior of an Average American Mind to-day!

But our Mexican Question is not one of could we but of *should* we.

The finger of the Past writes this Fact across the history of the world:—A race of free fighting men can always successfully invade any country where the mass of the people are enslaved.

The mass of Mexicans—the peons—are slaves:—witness the use of our word "peonage" to designate a crime.

The average American is a natural born fighter—witness the wars we have won with volunteers.

On August twentieth 1847, Scott with six thousand Americans took Mexico City from thirty thousand Mexicans fighting behind dozens of almost-impassable natural and artificial barriers *for* their own country *in* their own country.

Without doubt, we have the *might* to "put a battleship in every Mexican port and fling a hundred thousand men over the border," but have we the *right*.

—That is the Mexican question of today!

Men are being murdered there, the Jingoes cry: but is that really a good reason why we should cross over and make it unanimous?—The writer believes that one dead American would be a greater loss to the world than a hundred dead Mexicans, because the American has brains and the Mexicans are a broken breed of mixt and clashing bloods.

Foreign property is being destroyed?—But you cannot buy a certainty for a song, and *home* property costs more chiefly because it is properly policed.

"Caveat emptor" is still the law in such matters. A man buys protection for his property with his taxes:—let him collect from the seller if he can and not call on his relatives to make good his losses if he fails.

—Humanity demands intervention?—the last cry of the Jingoes. But let us conquer Mexico and what have we done?—Set the sickle of Death to swinging in our own grain-fields, calling up the cries of the childless and fatherless from every town and hamlet in America!—Saddled ourselves with another Race Problem, for we cannot assimilate this nation of half breeds; or with a long, costly and useless protectorate, for we cannot lift our hands from the plow when once we have laid them upon it!

And yet perhaps we could pay the price in men and money and leave ourselves and the world better off if Mexico could win to prosperity and peace in no other way than thru the establishment of a martial protectorate: but there is another way.

Madero saw that other way, although he was too weak to walk in it.

He knew that Mexico could never be free from dissension until her people were free in fact. He found the cankered spot in her empire-sized haciendas, owned and not one-per-cent used by a few upon whom the rest of the people were dependent for the very means and basis of life itself. He found the spot—but feared to ply the knife, and for his fears he perished with his dreams of a free Mexico.

He perished with his dreams but his dreams did not perish. They live today in one who was his most trusted lieutenant, governor of his home state during his brief Presidency; one with the same imagination to foster those same dreams but with the strength and will to make them *facts:—Vesustiano Carranza*, former governor of Coahuila and now Supreme Chief of the Mexican Constitutionalists!

Give him a fighting chance and Carranza will yet work out the problem of his people, finding the great answer of prosperity and permanent peace.

It is his plan to place the people on the land—their own land—there to work for themselves and for those they love as men will work only for such a purpose. It is his plan to break the hundred-thousand acre haciendas into a thousand farmsteads, each with its little home and happy, prosperous, independent family.

He has before him much the same problem which confronted the old English kings when the power of their feudal barons grew greater than the commonweal could bear.

Mexico today is practically a feudal country, with great landowners holding their estates in return for their support to the governmental cause, each supporting an army of retainers who, in turn, support their overlord in peace and war.

Past revolutions have changed the ownership of these gigantic tracts but they have not ameliorated the condition of the land-starved masses.

The spoils have gone to the leaders, wounds—and a little grimy glory—to the rank and file.

Carranza's revolution will change all that. Already he is preparing to divide among his people what property he has confiscated from the great federal

landholders—already he has enough to give his immediate army sixty acres of freehold to the man.

There are 767,323 square miles of Mexico to 15,063,000 people—enough to give every family of five a quarter-section of land if a complete division could be made.

Grant an eighth section as possible, imagine the peons of to-day as the owners each of eighty acres of farmland to-morrow, and conceive what chance there would be of starting any more revolutions!

Nothing short of tyranny would move the people then!—They would have a far stronger reason to keep the peace then they now have to break it; there would then be little inducement in burning and pillaging the farmsteads of others, leaving their own to be burned and pillaged in turn.

This is Carranza's goal: he may need to use bloody tools in hewing a way to it, but unless Fate or the United States interferes he will win thru to it at the last.

President Wilson has seen this vision of a happy, peaceful and prosperous Mexico even as Carranza has seen it and as many of his higher-minded followers have.

That is why the President is so unwilling to allow his country to be sneered or laughed or excited into taking Carranza's chance and Mexico's opportunity away from them.

Men are more than money and the future of a great nation is more than petty greed or personal power:—Mexico must work out her own salvation and, with the help of God and Carranza, she will!

THE END.

Clyde Stump-Puller Bought *for* Siberia

THE Russian government, thru Mr. William P. Anderson, agricultural commissioner for America, has purchased a stump pulling and piling machine to be used in reclaiming land along the Amoor River in Siberia.

The machine pulls, skids and piles all stumps, leaving the ground entirely clear and ready for immediate cultivation.

Mr. Anderson declares that the agricultural future of Siberia is almost beyond imagination; the country contains no less than one-sixth of the total farm land of the world, the greater part of which remains uncleared.

He compared the climate along the Amoor to that found in Western Canada and announced that the Russian government has undertaken the work of clearing thousands of acres to be given to industrious Russians, with a view to settling the country with prosperous and independent farmers.

This first stump puller will be shipped within a few days, its arrival being anxiously awaited by the community for whom it is to work.

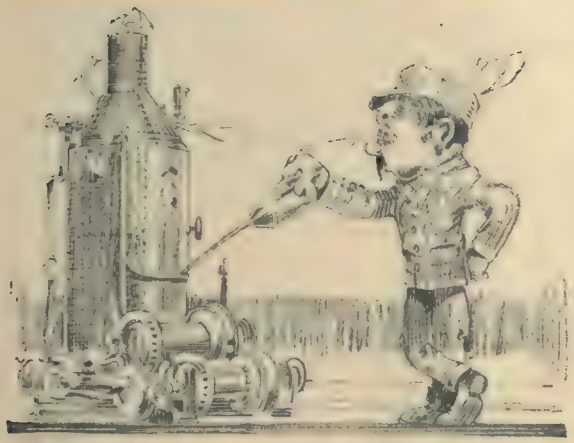
The machine is similar to one now being operated on the lands of the Houston Oil Company at Kirbyville, Texas, which has proved decidedly successful under somewhat trying conditions, clearing an average of two and a half acres a day in yellow-pine stumps with big tap-roots.

These Kirbyville lands have been cut-over for many years and in consequence the tops of the stumps are badly rotted, making it necessary to dig for a hold around a main root in a great many pulls. But for this, the capacity of the machine would be even greater.

However, this difficulty will not be encountered in the Siberian operations, since the timber has not yet been felled.

The machine illustrated is the one now at work near Kirbyville, but is of the same type as the one ordered for Siberian land-clearing.

These stump-pullers are built by the Clyde Iron Works at their factory in Duluth, Minnesota.



How to keep your Hoist Happy

Dont's For The Runner

Written for "Steam Machinery"
by A. E. Holcomb

33. Don't allow the ashpit to fill up with cinders as it will choke off the draft and as a consequence, the grates will burn and it will be harder to keep a good fire and a proper head of steam.

34. Don't fail to frequently verify the water level shown in the gauge glass by trying the gauge cocks. As near as possible keep two gauges of water all the time.

35. Don't forget if you have to lift the water quite a ways to the engine that it can be done better if you will put a tee at the top of the suction with a two or three foot piece of capped pipe rising from it to form an air chamber. The air chamber collects the air from the water and tends to keep the suction from breaking.

36. Don't run with a leaky blow-off valve. Repair it as soon as possible.

37. Don't run with a leak around a hand hole. Replace the gasket with a new one as soon as possible.

38. Don't, when leaks develop, around stay-bolts or in a seam, allow them to continue. Try to caulk them and if it cannot be done send for the nearest boiler maker to examine the boiler.

39. Don't tighten the double nuts on the valve stem so that they bind the valve. The valve casting should not have end play on the rod but it should be loose enough so that if you forget to open the drips when starting the engine, the water of condensation in the cylinders can shove the valve back off of its seat without bending the valve stem. The steam pressure will then seat the valve again on the planed surface over which it rides.

(To be continued.)

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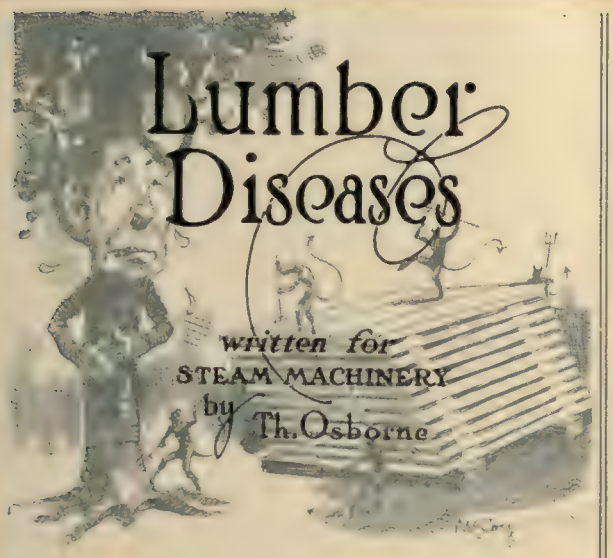

Disease of the Bark

THE term "diseases of the bark" suggests that trees are liable to be affected by ills approximating to the skin diseases of animals. There are important and a large variety of diseases of growing trees, which originate in the bark and the underlying layer or skin, and produce external symptoms that induce foresters or woodsmen to apply the term "diseases of the bark" to them. The more so as many of them result in the growth of malformations and excrescences, occasionally with outflowing of resinous and other fluids; there is consequently a very rough outward approximation to various animal diseases.

In some forest areas terms such as canker, cancer and other similar ones have been given to them. As too much detail might be wearisome, a brief reference to the more common and typical types may suffice.

The bark or outer surface of the tree is usually affected as the result of imperfect healing of small wounds, such as may be produced when the bark and inner lining (known as cambium) has been attacked by some parasitic or semi-parasitic fungus. The tree makes an attempt to heal the wound and a permanent excrescence is produced. The healthy growth of the tree is affected by the so-called rootlets or threads, of the fungus feeding on the cells making up the outer body of the tree.

Occasionally the wounds may be kept open or sore; in that case there is scarcely any limit to the damage the trunk may suffer therefrom. A tree affected by "canker" in some portion may be readily recognized; the bark may be split open and worn away in a V-shaped area—generally V-shaped both upwards and downwards—the inner layers of the timber are exposed, possibly as deep as the heart in a small trunk, or the wound may be more U-shaped. The general opinion would be that the bark has been injured and that the wound has gradually worked its way into the body of the tree. But that is

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not the case. The injury occurred at a younger stage of the tree's growth, such as might result from injury near the base of a dead twig. The wound would be attacked by some parasitic growth or fungus and extended; the consequence would be that no bark would form over the affected area and the next periodic zone of wood would not extend over it either and so on with every succeeding zone or ring. As the tree grows the wound would extend through the new rings of wood, not being completed over the area from which the bark is absent. The sore would have the appearance of having been eaten into from the outside, whereas it is due to the growth of the tree never having been completed over an old wound, which affected the bark and stopped the complete growth of the rings over the injured part.

The tree attempts to cure the wound by thickening the bark around it, which tends to curve over it, but that is counteracted, or checked by the growth of a parasitic fungus, which so to say feeds and fattens on the exposed inner rings or sore. Each succeeding ring of wood, the year's growth, does not extend quite as far round as that of the preceding year, consequently as the trunk increases in diameter, the wound tends to widen, so as to become a wedge shaped wound that goes on extending, until it embraces a third or more of the circumference. The tree, so to say, sickens and when it extends still further the vitality of the tree decreases until it ultimately dies.

There are various types of this canker; when they are due to frost they are susceptible to treatment more or less simple, which may successfully cope with the evil. Other varieties occasionally yield to only costly methods involving some trouble. Insects as well as fungi may keep the sore open. The trees attacked are generally larch, but others suffer as well, such as beech, oak, maple, alder and lime trees. In each species of tree the details of the trouble may vary, but there is a broad similarity. To quote an expert:

"Possibly no timber disease has caused so much difference of opinion, loss and trouble as the larch disease and there is far too little agreement among foresters either as to what they in effect are, or as to what causes the malady. The larch, like other timber trees, is subject to the attacks of various kinds of fungi and insects, in its timber roots and leaves; but the well known larch disease, which has caused costly devastations in plantations, is one of the group of cancerous diseases, the outward and visible signs of which are manifested in the bark and young wood."

When one of these wounds is examined with care, the dead base of a dried-up branch is frequently found in the middle of the V-shaped area of dead shrunken portion of the trunk; the wood around is found to have stopped its growth. In a healthy tree the bark will generally come freely away, but around the seat of the disease it adheres firmly to the wood. The fungoid

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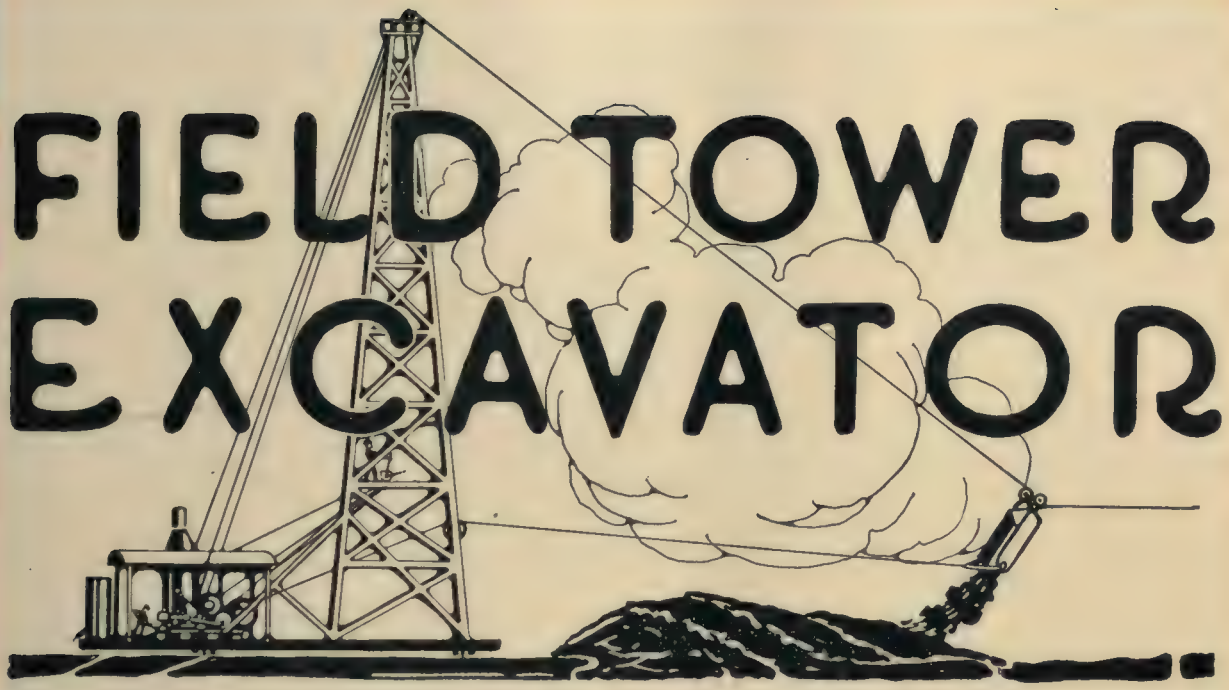

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growth may generally be found around the margin of the wound, where the healthy bark joins up to the dead; in other words, it draws its nourishment from the living tissues and not from the dead; consequently the disease must always tend to increase, until it works its way completely round the trunk, when of course the tree dies.

A symptom of the disease is that early in the summer the leaves wither after turning yellow, and occasionally a flow of resin occurs at the wound; possibly one of Nature's efforts to stem the evil.

The main consequence occurs above the wound; should it be on a branch it may be limited to it. The progress of the disease is necessarily slow and takes years to develop, during which the vitality of the tree is being gradually undermined.

It is important to note that if the spores and seeds of the fungus generally found on these diseased larches fall on healthy bark, they cannot take root or injure the tree; it is necessary for them to find a wound and enter. They can then obtain a lodgement and commence their growth and attack; a crack may be equally suitable. This can be proved by taking some of the spores and placing them on healthy bark, when no effect is produced. But if the tree is cut into and spores placed in the wound the trouble begins and the tree is doomed; the thread-like roots spread out in all directions in the body of the trunk and a flow of resin follows. The growth of the fungus generally takes place during the spring and ceases during the remainder of the year; the spores or seed are generally spread by the wind in the form of dust, but can be readily seen under the microscope.

The wound by which the spores enter may be caused in various ways, the tearing off of a twig may result from its being laden with snow during the winter; in some cases the wound may be caused by insects.

The weight of snow bending a branch may cause a crack, into which a spore may find its way. The disease does not generally spread or occur where the climate is dry; it is fostered by damp. Drought may either kill the growth or reduce the number of spores formed, so that it cannot spread.

With regard to treatment, when the disease is confined to a branch whilst the trunk and crown are healthy, it should be removed and burnt without delay. When the trunk is attacked, the tree should be cut down and the diseased portion burnt. But if the diseased part in a large tree is only small, the tree may continue to grow for some years before it is seriously affected.

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He can get the *rating* easily enough, but what he wants is exact knowledge on what kind of goods and service he may expect in dealing with that particular house.

It will take time to give him that information so that he *believes* it, because he has got along well enough in the past without the new house and must be *convinced* of a better future *with* it.

Must this time be the time of a salaried salesman with a soaring expense account?—But *why?*

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A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

FOR THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER

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PULLING STUMPS AT KIRBYVILLE.

(See Page 143.)

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We want to keep abreast of conditions in the logging, contracting, excavating and railroad building worlds; giving our readers the first news and the true news about labor saving methods in their respective fields.

We want to know what the men behind the machines are doing to cut costs and increase efficiency in getting logs, moving dirt, laying and lifting track, caring for their machines and so forth.

We believe it will profit the men who are doing things to let us publish the evidence of their efficiency; we know it will benefit the industry as a whole to read reports which will have a tendency to increase practical knowledge and kindle ambition.

We know that the man who has these facts is not usually a writer, but we have plenty of pen-pushers who will attend to dressing up such articles for publication.

We want and will pay for the *facts*, without caring a cuss about the form they come in, just so our not-very-intelligent reporters can get the point plainly and work it into perfectly pleasing paragraphs for the printing press.

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THE PUBLISHERS.

The Editor Thinks

In Ancient Greece, and less anciently in China, when the ruling powers came across a man with whose presence in the world they could well dispense, they issued him a Special Privilege to drink henbane or to stick himself in the stomach with a sword. Nor were such Specially Privileged given any option in the matter: they could either go kill themselves in a cleanly and comparatively painless manner, or the regularly appointed officers would do the job for them without pasteurising their prongs and in a peculiarly mussy and unpleasant way.

In the light of our modern wisdom this old system had its merits. Not the least of these was that—since the mandate was usually obeyed with promptness and precision—no man was forced to the unpleasant necessity of becoming a legalized murderer. But the great beauty of the Idea lies in its perfect accordance with the laws of Nature. We are our own executioners. Nature never dabbles her hands in the blood of her children; men kill themselves in and thru their minds in spite of her. Here the similarity between the old and the eternal ceases however. Nature never issues mandates of self-destruction to her kind: rather she rears a thousand walls of minor laws in the path to such an end. And this is what makes our modern hari-kari so tedious and so unpleasant.

So long as Nature needs us, she will fight our folly every step of the way and she always needs us. Not because she cares a dactylic gol-darn about *us*, you understand, but because her great governing Idea is the preservation of the Race. We are here to *help* and if we will not, we cannot help but hurt ourselves. Nature will befriend us to the last ounce of power in us and to the last throb of our muddied minds, but it is the Law that she must lose interest as we waste her capital of potential service. Who will not work must die soon; who will not work well must die none-the-less altho' the dying will take longer and will take place first in the mind. The man with the deceased mind is known to all of us. He was the subject of the Osler theory, but the dear doctor mistook the majority for the all. Not all minds die at forty, and none need die at all until food can no longer nourish and air revivify. Not even then, for it is the sublime privilege of every man that he may make his mind immortal in the Things of its creation.

None the less, ninety-nine men in a hundred hari-kari themselves out of the cosmos by following the Path of Least Resistance. This is indeed the broad and inviting road that leads to slow destruction. It may be well enough for a brainless bivalve to follow this Path until it ends among the digestive juices in some festive abdomen, but Men are more than Matter in that they have Minds.

Now the function of a Mind is to inform and not conform: whoeoer does not do his own thinking does not think, he merely acts as a mental drain. The mind that may not function freely, soon will not function at all—any idle motor will rust away and rot in time. Feed a man on mush long enough and he will lose his teeth. Feed a mind on pre-

digested Thought and it will lose its power of independent action which is its sole place and purpose in Creation.

Herein we find the grandeur in the work of men like Robert Ingersoll, the "Atheist". He was no atheist, who taught men how to think their own thoughts and find God thru first finding themselves. Because belief does not consist in blind acceptance of a dogma in default of hard mental labor in the mines of thought, seeking after gems of Truth. True belief is a sublimer thing than that and comes from clean, sincere conviction.

Now heaven forbid that any man should hold himself the highest form in all the universe and look no further than himself for the beginning, the end and the purpose. This were rank imbecility and utterly impossible to one possessed of the slightest power of rational thought.

But heaven forbid also that any man should take the predigested thought of another and pour it into his thought-tank to avoid the need for mental labor.

We must experience what we know or we can not know: we cannot even think we know, because he cannot think who will not.

And so I ask you readers not to take anything you find here too darned seriously. Remember, it is only the thought of one man and may be a million miles from the Truth as you have found it or will presently find it for yourselves. But, and you do not take this thought, do not take that of anyone else.

Do your own thinking!—You have all time and space to do it in and a Mind made expressly for the purpose.

△ ⊢▽ ♂

FOR YEARS ON YEARS MEN have been building up their brains with mental mud and their souls with spiritual offal.

They have been feeding on filth and mistaking it for philosophy. They have robed Lust in white cheesecloth and put a bunch of calico lilies in her arms, acclaiming her in the divine name of Love. They started by decrying Science as the service of the devil, but now they confidently expect the astronomers to discover God, in a pink nightie built on over his wings, waiting in Mars for the just-a-little-farther telescope.

Man taken as an intellectual entity, is a cotton pod in the crater of Vesuvious; he is a minus-nihil, that's what he is! Even then he is better than woman.

Man, at least, is a reasoning animal while woman is an emotional idiot. Man acts in accordance with his intellect, woman in accordance with her nerves.

The fact that few men have any intellect (the writer is one of the few) while all women have nerves doesn't make any difference.

Since man is a mutt, we declare it to be beyond successful contradiction that woman is a muttoness.

The twain wouldn't make one good laugh for a healthy angel—if an angel could laugh, not using air, and if there were any healthy angels, which of course there arn't since it is a prerequisite of angelhood that one shall be sick enough to die, and also do it.

All of which we dont even need to prove because it's been done already, over and over, by Great Thinkers who acknowledged themselves to be The Exceptions.

What thell are we talking about anyway?—Listen and we shall tell you.

We have been reading Books written by a bunch of Boobs having Boston beans in their brainpans instead of thought-slush. Each of these writers has been a self-acknowledged Great Thinker, and each has written for the express purpose of telling other Great

Thinkers what a laughable, lamentable lot of lumps the rest of created humanity were, are and must be, world without end. Sometimes they would vary the finale by Having Hopes for our Future.

Think of it, fellow humans, these gob-like splashes of putrid protoplasm have Hopes for *our* Future!—Why, it makes us so mad even to remember it that we feel like casting convention to the canines and squashing them (mentally, of course) between the sheets.

All of us have surely come across this kind of book at one time or another. It raises itself by its bootstraps to a lofty and unemotional plane of Alleged Thought wherefrom it surveys our mundane mud with profound pity, not unmixt with that smug satisfaction one might look for in an inspired Torch-Bearer who had gazed longingly and long upon the Wine when it was ready.

If humanity is ever to be helped it will not be through the egotistical efforts of such slingers of spiritual slush. It will come thru the untiring efforts of the people themselves drawing a little nearer every year, in the light of Love and Labor, to Liberty.

For we dare not doubt that men shall be free at length: free to work as they must and to think as they will, to love and to laugh and to lend a hand. But they must take their freedom: it never can be given to them.

△ ⊢ ♂

THE FIRST STEP ON THE road to success is to learn to do your own thinking.

The second is to acquire the industry to do your thots into things without being told.

The reason most men earn so little is because it costs so much to have other men do their thinking for them or drive them into doing things they might have thot out for themselves but are too lazy to act out.

Clear-thinking and hard-working are both habits which can be acquired by everyone, just as the drink and drug habits can be acquired.

Habit is nothing but an action (or series of actions) repeated until it becomes semi-automatic: walking is one of the first habits acquired by the human animal.

Just as a child learns to walk, with difficulty and pain at first, so men must learn to think and to do. It is hard at first, but becomes easier with every repetition.

It is well to remember however that a man is not necessarily thinking because his brain is working. Thot is a matter of intelligent selection and combination of concepts to form Ideas. Merely to allow other men's thot to trickle thru the brain is not thinking: you must be able to tell yourself *why* you believe a thing before you really believe it. Acceptance is not belief until it is the result of mental analysis.

Next time the boss tells you to do a certain thing go do it promptly and well but at the same time try and reason out for yourself why he wants it done: then if it becomes necessary a second time you will be able to see the necessity and do the thing yourself without being told.

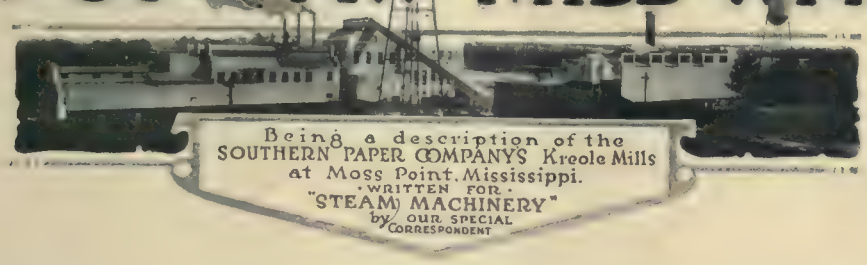
Keep this up for just a little while and you will find yourself drawing pay for doing other people's thinking for them and telling them what to do.

The whole world is divided into just two classes: Thinkers, who are masters; and Thought-Reflectors, who are the slaves.

But every human may choose his class, although if he lacks the energy and ambition to choose the first he will inevitably remain in the second.

Life is all a matter of thots to be done into things: who will not—or cannot—make the thots, must make the things.

USE OF SAW MILL WASTE



YOUR correspondent has recently had the pleasure of visiting at Moss Point, Mississippi, what is probably the best example of the use of saw mill waste in America, if not in the world, and it will undoubtedly be of great interest to the lumber trade and to all owners of timber, especially since it is now shown conclusively that the waste products of the yellow pine can be turned into fully as much value as the lumber produced.

The Southern Paper Company's Kreole Mills at Moss Point, Mississippi, is the first development in American countries of the researches and inventions of Carl P. Carlson, the eminent Swedish Chemical Engineer, whose Recovery System made the now famous Kraft papers a commercial possibility. Mr. Carlson was for many years known throughout European paper trades as the foremost fibre chemist in Sweden, and was the designer of upwards of twenty-five successful mills in Sweden, Norway and Finland for the manufacture of sulphate fibre from Swedish spruces and pines. Many of these mills used the waste from saw mills along both sides of the Baltic Sea.

The International Process Company of New York and London was formed to exploit the Carlson patents in America with Mr. Carlson as Consulting Chemist, Mr. A. W. Waern, formerly with Mr. Carlson in the design of the Carlson apparatus and the operator of Swedish mills, as Mechanical Engineer, Mr. Joseph H. Wallace of New York City as Consulting Engineer, and Mr. E. M. Sawtelle, formerly of the Westinghouse Electric & Manufacturing Company as General Manager, this company has developed apparatus for taking either small standing timber not suitable for lumber, or saw mill waste, as raw material, and producing a superior grade of paper suitable for a great variety of commercial uses, incidentally recovering 85% of all the chemicals for reuse in its own plant; and finally in reclaiming turpentine, alcohol, pine oils, liquid resin, et cetera from the incrusting matter that binds the cellulose together in the wood.

The Southern Paper Company was organized in 1912 to build and operate paper and by-product plants in the territory generally known as the Pitch Pine Belt, and its first plant, the "Kreole Mills" was erected during the past fifteen months on a tributary of the Pascagoula River, at a point where saw mill waste from pitch pine lumber is plentiful and available by water transport.

The Pascagoula River drains one of the best known strips of pitch pine in the United States, and at Moss Point, Mississippi, many saw mills are located ,all with water shipping facilities. These mills are naturally chiefly in the export trade.

The waste slabs and edgings for many years burned in tremendous quantity, are now cut in four feet lengths by a gang saw located just at the point of delivery; and a conveyor delivers the material to the barges, which are towed to the Southern Paper Company's plant and unloaded to a storage pile served by a conveyor on a trestle 900 feet long and 60 feet high.

WOOD PREPARATION

From the pile conveyor the material is delivered as required, to a wood preparing building, where the wood is reduced to chips. These are sorted and screened free from saw dust and bark, which are burned as fuel, The uniform chips are carried on a belt conveyor to the top of the digester building, the upper portion of which forms an immense bin for storage of chips prepared for the manufacture of fibre.

DIGESTERS AND DIFFUSERS

The digester building is the tallest of the group shown in the accompanying pictures, in which the chip conveyor trestle, or bridge, is clearly shown.

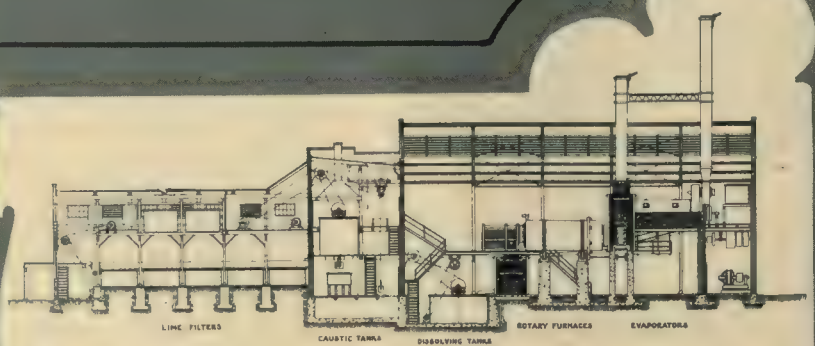
The digesters are of the tumbling barrel type of welded steel, nine feet in diameter and twenty-eight feet long, with conical ends and arranged to revolve on trunnions, which admit superheated steam while in motion.

The digesters are filled by gravity from the chip bin. The cooking liquor is then added, also by gravity, and after the cover is bolted on steam is admitted, and the revolutions of the digester begins. The action of the liquor is chiefly solvent, the resinous matters being taken from the cellulose and drawn off and washed out in the diffusers, which occupy the building adjacent to the digester house. From the diffusers the pulp, now thoroughly washed, is dumped to a chest from which it is pumped through a screening and settling system, by which the fibres are sorted and cleaned free from knots, bark, and other matter, and only the pure fibre goes on to the paper plant, shown in the foreground of figure.

PAPER MACHINES

Two paper machines have been installed, one a straight Four-

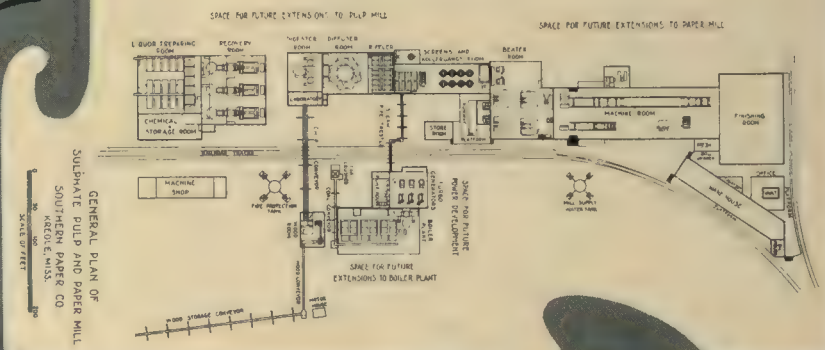
Use of Saw Mill Waste



LONGITUDINAL SECTION OF
LIQUOR PREPARING AND RECOVERY ROOMS
SOUTHERN PAPER CO.
KREOLE, MISS.

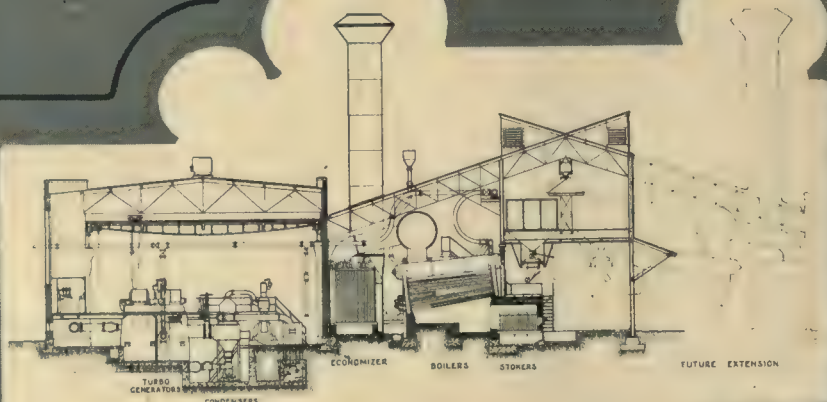
SCALE OF FEET

LONGITUDINAL SECTION OF PULP AND PAPER MILL



GENERAL PLAN OF
SULPHATE PULP AND PAPER MILL
SOUTHERN PAPER CO
KREOLE, MISS.

SCALE OF FEET



CROSS SECTION OF POWER PLANT
SOUTHERN PAPER CO.
KREOLE, MISS

SCALE OF FEET

SOUTHERN PAPER CO.'S "KREOLE MILLS."

drinier, the other a special machine for making so-called Machine Glazed lines, extensively used for envelopes for mailing catalogues, etc. The Fourdrinier will produce thirty tons per twenty-four hours, and the special machine ten tons per twenty-four hours.

The papers made are of a natural dark brown color, and since no acids or colors are used, are absolutely anti-tarnish, and on this account are very desirable for wrapping of silverware, cutlery, etc.

One of the principal features of this plant, and one that has a very considerable bearing on making the process a commercial possibility is the department for the recovery of chemicals. Valuable chemicals are contained in the liquors and gases resulting from the process of cooking or digesting the wood. Volatile oils are given off and mixed with the steam used for heating the wood that is in contact with the solvent liquors in the digesters. This steam and gas is drawn from the digester at intervals during the cooking process; and the turpentine, alcohol, pine oils, et cetera, are extracted by condensation for further separation and refining.

The solvent liquors are blown from the digesters with the wood after it has been completely cooked under the proper pressure of steam; and these liquors are separated and washed from the wood pulp by the diffusion system which completes the washing process by the addition of a minimum amount of fresh water.

This feature of keeping the spent liquors to a high point of concentration is a most important element in the final recovery of chemicals and the diffusion washing assists to a marked degree in excluding water that would otherwise have to be evaporated by costly methods from the spent, or so-called "black liquor." This black liquor as it leaves the diffuser is conducted to storage tanks, thence through pipes to the recovery furnaces. On its way, however, a certain amount of liquid resin is extracted. The reduction of black liquor into a commercial article is accomplished first by a process of evaporation that extracts enough water to enable the residue to burn. The evaporation takes place in a special chamber and is sustained by the heat generated in burning the residue.

When the density is sufficient for the residue to support com-

DIGESTER ROOM

bustion, it is still in liquid form, and flows to a rotary furnace, where it becomes ignited and burns to a "black ash" which is laden with the chemicals that are to be recovered.

The black ash is not completely burned, however, by the rotary furnaces. There is still some carbon left that must be consumed before the valuable salts are recovered, and this is finally accomplished by further reduction in a smelting pot. A blast furnace is used for this purpose and sufficient carbon remains to complete the reduction and fusion of the various salts that flow from the bottom of the blast furnace in a molten stream to dissolving tanks where the salts are finally dissolved in water preparatory to going to the liquor preparation tanks.

This solution is causticized with quick lime in the preparation of fresh liquor for cooking the pulp wood, and the process just described is repeated until the recovered chemicals again come back to be causticized.

The losses that occur in the use of chemicals which amount to about 15% are made up by adding fresh material at the smelting pots and causticizing pans.

POWER PLANT

The Power Plant is divided into three rooms, the Generator Room, Boiler House, and Water Supply Pump Room. The building is constructed of brick and steel, with brick partitions between the several rooms.

In the Generator Room, the main floor is at ground level. Here are located air pumps, condensers, et cetera, and the generator foundations. which rise to the mezzanine, where are located the turbo-generators, switch-board and exciters. Spanning this room is a fifteen ton traveling crane accessible to all parts of the room where the handling of machinery necessitates its use. The switchboard that controls the generators and feeder circuits is located at one side of the room, in a bay projecting outside the main building lines. The principal dimensions of this room are 53 feet by 50 feet. In this space is generating machinery capable of developing at normal rating 2300 kilowatts. Adjacent to this room and at one end is a room 23 feet by 50 feet in which are located the main water supply pressure pumps and an underwriters' fire pump.

The Boiler House, which is 115 feet by 64 feet lies alongside

ELECTRIC GENERATOR ROOM

these two rooms and is also of brick and steel construction. Suspended from the steel frame of this building are steel coal bunkers situated over the boilers from which coal is drawn by gravity to the furnaces.

COAL HANDLING

Coal, which constitutes the greater portion of the fuel used, is brought to the plant on cars by rail. Side tracks run alongside the plant, and coal is unloaded from cars by using a Hayward Clam Shell Bucket operated by Browning locomotive crane. From this bucket the coal is discharged into an elevated hopper that feeds through a crusher to a belt conveyor laid on an incline and delivering to a distributing conveyor over the coal bunkers in the boiler house. This distributing conveyor is provided with gates for filling any of the six coal hoppers as desired.

As coal is required in the furnaces, it is drawn from the overhead bunkers into a movable weighing hopper, weighed, and dropped into whichever furnace requires replenishing.

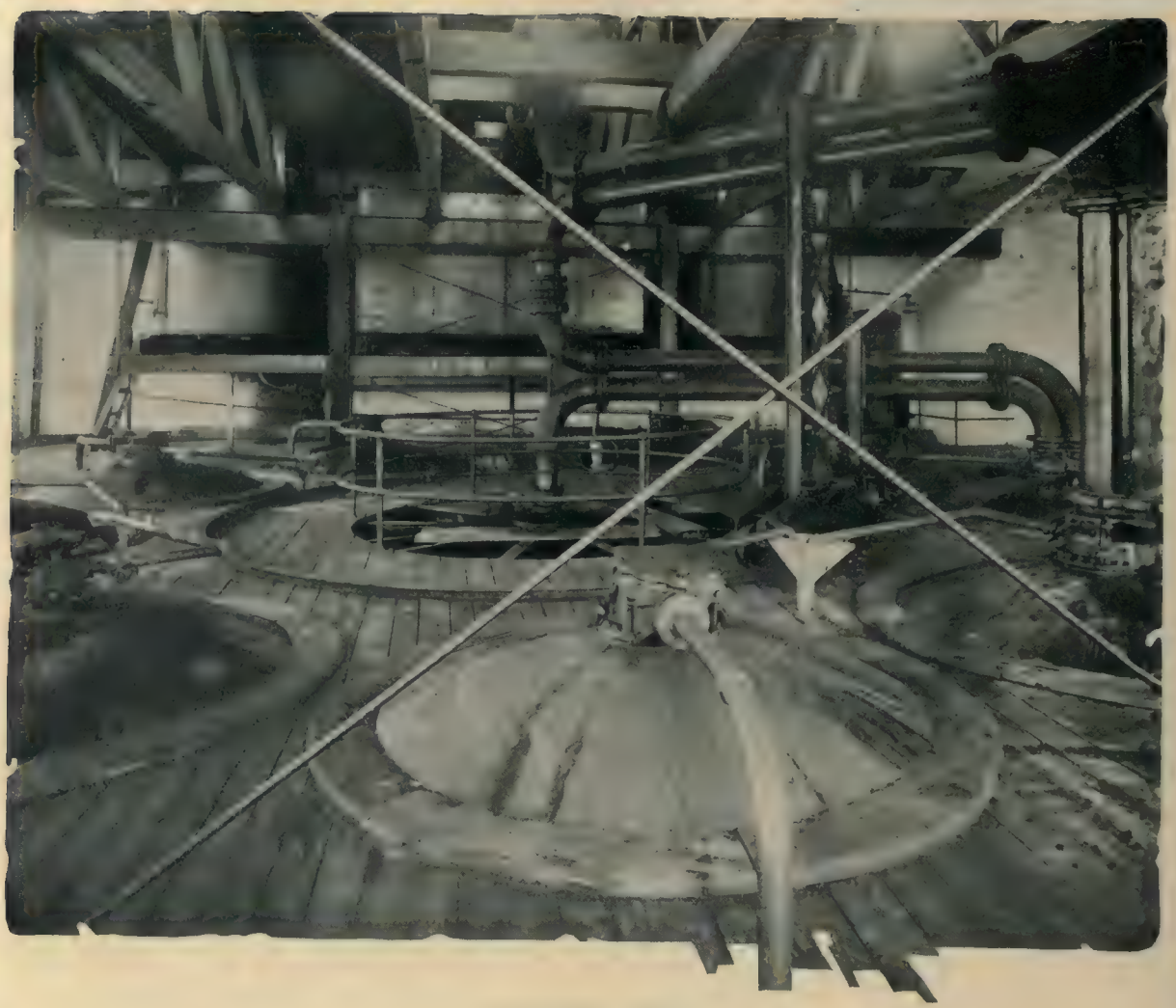
The bottoms of all the bunkers deflect towards the centre, where a valve controls the filling of the weighing hopper, insuring the movement of all the coal in the bunkers and preventing the lodgement and consequent danger from spontaneous combustion of dead coal.

BOILERS

The boilers are arranged along one side of the Boiler Plant in three batteries of two boilers each. Five of them are used for burning coal and one for burning wood refuse, bark, and saw dust, a small quantity of which gradually accumulates and must be disposed of.

The boilers are all of the water tube type, and were built by the Casey-Hedges Company of Chattanooga, Tennessee. Each contains 3,860 square feet of heating surface and is commercially rated at 386 horse power. They are built for a working steam pressure of 180 pounds per square inch. Each one has two steam drums 36 inches in diameter by 21 feet 10 inches long, and 218 tubes 3½ inches in diameter by 18 feet long, arranged 14 rows high.

The five boilers used for burning coal are equipped with mechanical stokers made by the Detroit Stoker Company. These furnaces project out in front of the boilers in the form of a



DIFFUSER ROOM

Dutch Oven, and the coal that is dropped from the weighing hoppers on to the tops of the furnaces is mechanically fed to the grates by the stoker mechanism.

Two steam engines are provided for driving the stokers; and they are so arranged that in case of breakdown to either engine, the other can drive the complete equipment of stokers.

The boiler that is used for the disposal of waste wood, bark, et cetera, is equipped with plain flat grates set in a Dutch Oven, and so arranged that the fuel can be charged at the top or in the front as desired. A circular sheet steel flue connects the boilers with the economizer, or with the mechanical draft equipment, and suitable dampers direct the flow of smoke as may be desired.

SUPERHEATERS

Inserted in the path of hot gases as they pass through the boilers are Foster Steam Superheaters, manufactured by the Power Specialty Company. There is one superheater for each boiler. The entire quantity of steam produced is passed through these superheaters, and raised to a temperatue of 440 degrees Fahrenheit, when it enters the system of steam piping that conducts it to the various parts of the mill.

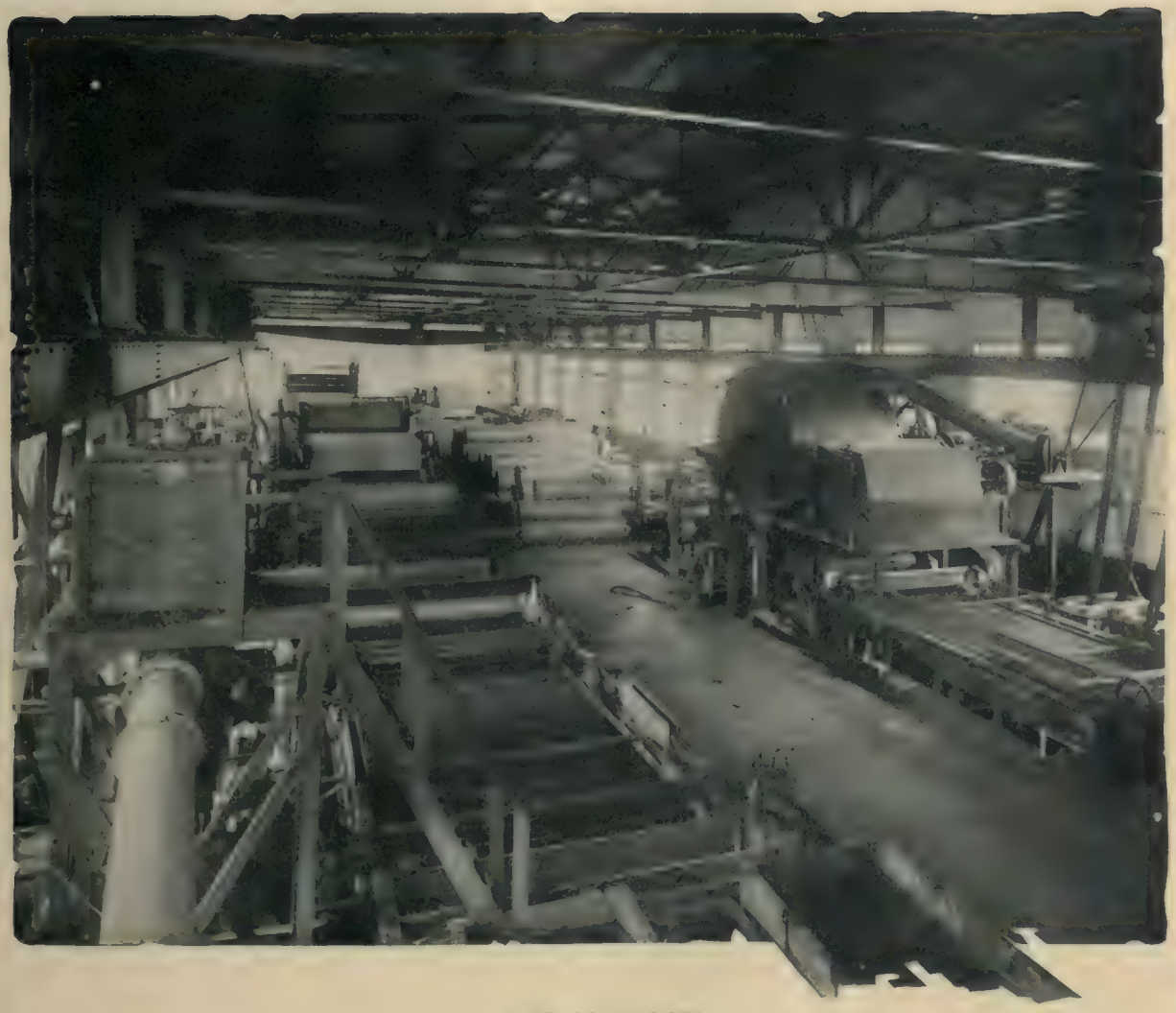
INDUCED DRAFT SYSTEM

Draft for the furnaces is produced by means of engine-driven steel plate fans connected with the flues and discharging through a short steel plate chimney. These fans are in duplicate, each being of ample capacity to produce draft for the complete equipment of boilers, and thus rendering the liability of shut down from mechanical disability very remote.

They each have blast wheels 11 feet in diameter by 6 feet wide, and are driven by vertical, self-oiling steam engines, with 11 inch diameter cylinders of 10 inch stroke. The engines are governed to act as the steam pressure rises and falls. With a falling steam pressure the engines speed up, thereby producing a more intense draft, and as the pressure rises the reverse action takes place and engines slow down.

BOILER FEED PUMPS

The boilers are fed with water by two direct acting duplex pumps, driven by steam. Each pump is of sufficient capacity to feed all the boilers, thus leaving one pump in reserve for emergen-



PAPER MACHINES

cies. They are the outside end packed plunger type, with pot valves, and were built by H. R. Worthington. Two lines of feed pipe supply each boiler and valves are arranged in such a manner that either pump may discharge into either feed pipe line.

FEED WATER HEATING

All the water fed to the boilers is passed through a feedwater heater and a fuel economizer before entering the boilers.

The feedwater heater controls automatically the quantity of water required and has a large storage capacity in a tank directly beneath the heater.

Exhaust steam from the feed pumps and auxillary apparatus in the power plant is piped to the heater and mixes with the cold water which is brought up to a temperature approximately 200 degrees Fahrenheit before it reaches the feed pumps.

The feed pumps then force it though a fuel economizer which consists of a battery of cast iron pipes placed in the path of hot gases between the boilers and chimney. The water circulating though these pipes is brought to a still higher temperature by extracting heat from the products of combustion that would otherwise be lost when leaving the chimney.

GENERATORS

Adjacent to the boiler house is the electric power generating plant, and the water supply pump house. Three 750 kilowatt General Electric Company's turbo-generators supply electric power for motors and lighting for the entire mill. These generators are 3 phase, alternating current machines, and generate at 600 volts and 60 cycles per second.

The steam turbines operate at a steam pressure of 150 pounds per square inch, and at 80 degrees superheat. They exhaust to jet condensers which maintain a vacuum of 28 inches of mercury. Each steam turbine has its individual condensing unit.

CONDENSING APPARATUS

The condensers are of the jet type with centrifugal removal pumps placed directly beneath. These pumps draw the cooling water away from the condensing chamber after the steam has been condensed and discharge it to the river. They are driven by small non-condensing steam turbines which exhaust to the feedwater heater.

For exhausting the non-condensible vapors and air from the condensers, vertical rotative dry vacuum pumps are used, driven by steam and also exhausting to the feedwater heater in the boiler house. The entire condensing plant was supplied by H. R. Worthington.

EXCITERS

For exciting the field of the main generators a 125 volt direct current generator is used, driven by an induction motor. This machine is also supplemented by a similar generator driven by a vertical steam engine used in starting up the plant or for other emergencies.

SUNDAY UNIT

As there is a limited demand for electric power principally for lighting purposes over Sundays and holidays, a small alternating current generator is provided of 50 K. V. A. capacity. This machine has the same characteristics as the main generators, and for light loads can be operated more advantageously than the large turbo-generators. It is connected to the main bus bars and can be operated in parallel with the large generators, thereby giving continuous service when the load becomes sufficiently light to permit shutting down the main generating plant.

This generator is driven by a vertical enclosed, self-oiling steam engine, and has its exciter direct connected to the generator shaft.

SWITCHBOARD

The switchboard that controls the electrical equipment in the power plant and also the various feeder circuits to the mill buildings consists of twelve panels of black marine finished marble and is supplied with a complete equipment of switches and instruments.

The 600 volt alternating current is controlled through oil switches all of which are suspended on pipe racks back of the switchboard panels and are connected with the operating levers on the front of the switchboard by rods and bell cranks. There are no alternating current switches or bus bars attached to the main switchboard panels. Four panels control the three 750 K. W. generators and the 50 K. W. generator; one panel controls the two exciters; one panel contains a recording watt hour meter and ammeters in each phase, showing the total output of current. Five panels each control double feeder circuits, and one panel controls three lighting circuits.

The feeder switches are provided with overload and time limit relays. Indicating wattmeters are placed in each feeder circuit.

WATER SUPPLY PUMPS

In a room at one end of the generator room are installed the main water supply and fire protection pumps.

The water supply pumps are single stage centrifugal pumps of capacity to pump 1800 gallons per minute and are driven by direct connected induction motors. The operation of these pumps is controlled automatically by the level of water in the water supply tank. This tank is supported on a steel tower and has a capacity of 50,000 gallons of water.

For fire protection a 1,500 gallon underwriter fire pump is provided in this building, and this pump keeps a 75,000 gallon tank filled which supplies the fire mains that surround the various buildings and workmen's cottages.

CONSTRUCTION AND OPERATION

A general plan of the entire plant is shown herewith, from which it can be seen that the process is a continuous one, from the digester building to the finishing and shipping departments, thence into cars or boats.

The construction is largely fireproof, and the mills are equipped with a power plant, water works, and fire department sufficient in capacity for a city of 5,000 inhabitants.

They began operating commercially on August 1st, 1913, to about twenty tons daily of high grade wrapping and envelope papers. Arrangements are being completed so that by March 1st, 1914 the plant will be producing about forty tons of paper per day.

Over 200 men are employed, many of them are skilled operators. The mills start Monday morning and run continuously until Saturday evening, the operators being divided into three shifts, working eight hours each.

ORGANIZATION

The Southern Paper Company is controlled and largely owned by bankers, together with the engineers and chemists under whose direction the developments have been made and who operate the plant. The officers are; President, J. Lewis Dantzler, who is also President of The Standard Export Lumber Co. of New Orleans, La.; First Vice-President, A. Shirley Benn, M. P. of London, England, a Director of the Hunter-Benn Co. of Mobile, Alabama, the Western Canada Trust Ltd. of London, England, and of several Canadian Industrial and Financial Corporations; Second Vice-President, Joseph H. Wallace, of Joseph H. Wallace & Company, Industrial Engineers of New York and London; Treasurer, Alfred F. Dantzler, of Moss Point, Miss.; Assistand Treasurer and General Manager, Joseph G. Mayo, formerly of the Spanish River Pulp & Paper Mills Ltd. of Ontario, Canada, and of the Canadian Pacific Railway.

Among the Directors are also Francis H. Benn, of Price & Pierce Ltd. London; Wiliam S. Hofstra, of Price Bros. Co., lumber and paper manufacturers, Quebec, Canada, and of the Diamond Match Co., of New York; and J. G. F. Lowson and William M. Wallace of the Carrongrove Paper Co., of Denny, Scotland.

Others interested are Sir Alex. Kleinworts, of Kleinworts Sons & Co. London; A. E. Bowen, of Wilson Sons & Co.; E. Mackay Edgar of Sperling & Co., Bankers of London; J. Charles Potter of The Wall Paper Manufacturers Ltd. London, England; Hon. A. Bonar Law, M. P., I. Hamilton Benn, M. P. and several other members of the English Parliament.

The plans, specifications, purchasing of equipment, supervision of construction and general engineering involved in this project has been executed by Joseph H. Wallace & Co., Industrial Engineers, with offices at 5 Beekman Street, New York, and Salisbury House, London, England.

THE END.

PULLING STUMPS AT KIRBYVILLE

A SHORT STORY OF SUCCESS WITH A STEAM STUMP PULLING-SKIDDING-PILING DEVICE

Done into an Ocular Demonstration with Camera & Caslon

by S. MacHinery

AFTER the logger and the sawmill, there came to Kirbyville a steam stump puller; while shortly after the arrival of said stump puller there came also S. MacHinery bearing cameras and notebooks.

For the news had been noised abroad that here the cut-over problem—in one phase at least—was in process of successful solution; and wherever springs news of such vital interest to his readers, there springeth S. MacHinery also.

It was true news, readers!—Hence these plated pictures and gobs of ten-point Caslon:—Read on!

* * *

Having "found itself"—as Kipling intimates every piece of machinery must—the stump puller in question had been pulling, skidding and piling stumps for fifteen full days before the timely arrival of our reporter.

Minute records having been kept thruout this period, which records were promptly placed at his disposal, he was enabled to arrive at a far more accurate estimate of the capacity-costs of the machine than would have been possible from a brief two-day inspection.

Not to keep you in suspense any longer than necessary, these may be briefly epitomized as follows: An average of a hundred and ten stumps were pulled, skidded and piled daily at an average cost of a shade less than 28c per stump.

Stumps were practically all longleaf yellow pine, ranging in size from ten to forty inches in diameter.

There averaged forty-four to the acre, making the average cost of clearing $12.38 per acre, two and a half acres being cleared daily.

The stumps were mostly from five to eight years old, many of the tops being so badly rotted that the choker cut thru, making it necessary to dig for a pulling-hold around the roots and considerably retarding the work. One man was employed exclusively in grubbing out toe-holds about the roots of such stumps and others whose tops had been burned off.

An occasional green stump varied the program, and these being cut at least three feet in height afforded an excellent hold, enabling the machine to indulge in enough of a burst of speed to offset a few of the many difficult pulls.

Crew of the Slippin' Sue.

The experiment took place in a low rolling section of Texas, soil on the high ground being a sandy clay with a tenacious clay subsoil; while the swales were of a silty clay and quicksand with very wet clay underneath.

The type of machine used is, beyond doubt, the most satisfactory stump puller yet built. It is of the same general type as former machines built by the Clyde Iron Works of Duluth, with a great many additional features—the result of past experience—added.

The engine is double cylinder 10"x12" link motion, with 54"x-120" high pressure boiler. The two speed pulling mechanism, mounted on a cast steel bed, has a steel drum thirty-two inches in diameter, giving a line speed of fifty feet a minute at low speed and four hundred feet a minute at high.

It is capable of a maximum pull of 140,000 pounds.

The outhaul mechanism, which returns the pulling line to the stumps, is mounted on the main engine bed; as also is the drum containing the piling line running to the swinging boom used in piling the stumps for burning. This boom is an 11"x11" long leaf pine stick, 36' long.

The outhaul has a line speed of eight hundred feet a minute. The piling mechanism operates at about the same speed as the skidding line on high—four hundred feet a minute—having a lifting capacity of twenty thousand pounds.

Two swinging drums, controlling the movements of the piling boom, are mounted symetrically on extensions of the forward shaft.

The steel base of the machine is nine feet wide, thirty-two feet long and fifteen inches high.

The bottom is plated fully between the runners or skids, which are of armored timbers rounded up at both ends.

The main drum carries four hundred fifty feet of 1⅞" Hercules six by nineteen wire cable, and the outhaul fourteen hun-

"Slippin' Sue"—The Machine which did the Work.

dred feet of 5/8" Hercules. 3/4" Hercules is used for piling and swinging lines.

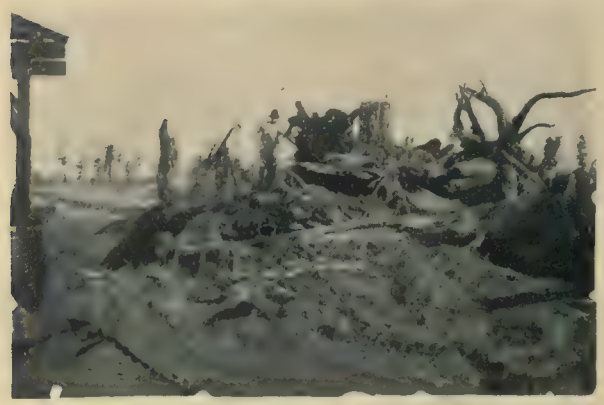
The anchor line, used to secure the machine to stumps or suitable anchorage in the rear, is one hundred fifty feet in length and is of 1 3/8" Hercules.

Six days after the machine arrived at Kirbyville, it was ready to hit the trail for the scene of action.

Three men and a team did the work of unloading, assembling the machine and building a wooden cab, all at a cost of sixty dollars.

The machine was then moved out, under its own power, a mile and a third thru the fields to the cut-over lands; this operation occupying two days time.

In moving, the pulling line was taken out ahead, make fast to a stump or tree and the power thrown in, whereupon the "Slippin' Sue" (as she was promptly christened) slipped alongeasily and speedily on her armored runners.



Some of the Piled Stumps.

The complete cost of moving was $21.75. The "Slippin' Sue" pulled her first stump on December 31, '13.

For seven days thereafter, the work was mostly that of organizing a crew and familiarizing them with the equipment.

Eight acres of land were cleared in the course of this seven day settling down period, the total cost amounting to $163.00.

On January 8th 1913, the "Slippin' Sue" settled down to business and began to prove her mettle.

From then till January 26th—the period covered in the report handed S. MacHinery on his arrival—she pulled, skidded and piled an average of 109.57 stumps per ten hour day.

Working under good conditions, medium sized stumps were handled at the rate of twenty an hour for as long as favorable conditions continued.

The maximum hourly capacity was thirty stumps and the average working hour capacity about fifteen.

In making sets, the average area covered was four and three-quarter acres, being approximately 600 ft. broad by 350 ft. deep, for which the outhaul cable had to be taken out twice and the anchor cable usually changed to

Two Acres of Stumps.

line up in the general direction of the pulls.

Sets were taken in strips across the face of the clearing, which was a quarter mile long.

A full crew of men was maintained, consisting of the following:

Foreman	$5.00 a day
Engineer	3.50 a day
Leverman	2.00 a day
Fireman	2.00 a day
Helper	2.00 a day
Two hookers	4.00 a day
Tongman	2.00 a day
Stump grubber	1.50 a day
Water team	4.00 a day
Fuel team	4.00 a day
Total daily cost	$30.00

The total cost up to January 26th was $467.50, amounting to $12.38 an acre or 28c a stump.

Twenty four hundred gallons of water were used in a full day and in no case was more than a cord of wood burned.

With good pine knots, three quarters of a cord sufficed for a full day's run.

Crucible steel chokers, 1½" in size and sixteen feet long, were found to be the best size. They had sufficient strength to take the hardest pull and were easily handled by two men.

By an ingenuous arrangement of lines, the choker is automatically released after depositing a stump in front of the machine.

A ten foot tag-line is attached to the end of the pulling cable by means of a swivel and clevis.

This tag-line terminates in a heavy hook over which the loop in one end of the choker line is slipt.

This hook is attached to the outhaul cable with a short chain, from which chain a light line of proper length runs to the choker hook.

When the return pull comes on the outhaul, this arrangement first pulls the big hook out of the choker-loop allowing the outhaul to continue with the released pulling line; the pull is next taken by the light line running to the choker hook, pulling this hook and the now-loose choker line attached to it, along with the skidding cable back to the stumps again. The arrangement is clearly illustrated in the photograph below.

View showing arrangement of automatically releasing choker.

Same two acres minus 150 stumps, taken out in one day.

While the line is going back, the previous stump is piled to one side with the piling boom and line.

On the day of S. MacHinery's arrival the Houston Oil Company (owners of the Slippin' Sue) had arranged a regular stump-pulling party to which all the officials of the company and other people of importance were invited.

"Other people of importance" meaning Mr. and Mrs. Director of the U. S. Forest Products Laboratory at Madison, Wis., *not* S. MacHinery, who was merely incidental and would have been there in any event.

Jupiter Pluvius was not invited but put in an appearance anyhow, making slickers and umbrellas more to be desired than rubies and fine raiment.

All morning it rained and rained and rained, varying the monotony occasionally by raining a little harder.

Notwithstanding which, the Slippin' Sue got down and rooted; doing herself, her makers, her crew and her owners credit.

Stump after stump she pulled and skidded and piled, while the party balanced itself on logs and said "Oh bother!" and other things about J. Pluvius.

However, everybody was plumb tickled with the Slippin' Sue's performance; particularly Director Weiss of the U. S. F. P. Lab. aforesaid, who would fling himself on an incoming stump and grab off a handful of forest products every once in a so often, gloating audibly over the gobs of sticky stuff which squeezed out and mussed up his mitts.

He wanted to put up a reducing plant on the spot and stay there forever, but the bunch finally decoyed him into the waiting auto with the promise of some strawberry preserves if he would come back to Kirbyville.

The bait would prove irresistible to any person with a palate, an appetite, and either a preknowledge of the facts or a working imagination.

Director Weiss had three of these and so gave his consent to being peeled away from the forest products to which he had become attached.

Our story loses itself among said strawberry preserves, emerging only to remark that the Slippin' Sue certainly delivers the goods!

—Time and greater familiarity with the operation will undoubtedly enable her crew to cut her costs and increase her capacity, while her makers—The Clyde Iron Works—will doubtless effect some few additonal improvements; but, just as she is, she represents high-water-mark in land clearing efficiency.

MAHOGANY FORESTS

WRITTEN FOR STEAM MACHINERY

By

DR. LEONARD KEENE HIRSHBERG, A. B., M. A., M. D.
(JOHNS HOPKINS)

NO FABLE is more impressed as a fact on the minds of men who are nothing of woodsmen than the fable of the mahogany forest. It is commonly spoken of in describing the richness of an unexplored or inaccessible country. It has been said of Costa Rico, even of Panama before it became as well known as any populous state of this country.

There is no such thing as a forest of mahogany. The pine tree loves its own kind and never thrives better than when planted by nature or by man, one tree next to the other, over mile after mile of plain or mountain. Other trees are found in groves or clumps, seeming to form little settlements within the woods. The mahogany tree, however, lives by and for itself alone. It stands solitary of its species surrounded by the smaller trees and dense undergrowth of the tropical forest, rearing its head high above all.

Mahogany is a popular name for the timber of several unrelated trees, among which are various species of eucalptus, myrtles, and so-called cedars. There is a valley mahogany and a mountain mahogany in the Rocky Mountains, neither of which is the genuine tree. Africa exports real and fake mahogany, and from East India comes a wood that reaches the importer as mahogany, although belonging to another order of plant.

True mahogany is distinctly a native of tropical America, but occasional small specimens have been found in Southern Florida, and similar trees never reaching the height of the American relative have been found in India. Mahogany has been planted in Southern Florida, Southern California and parts of Mexico, but only as an ornamental tree, because it is of such a slow growth and requires for full maturity such natural surroundings, that for commercial purposes it would be impossible of cultivation. It is a giant among even the giants of a tropical forest. It towers sometimes to a height of 100 feet. The trunk is often 50 feet in length and 12 feet in dizmeter, and it divides into huge arms and throws its shade over a vast extent of surface. The precise period of its growth is not accurately known, but when large, it changes little during the life of man, the time of its arriving at maturity being estimated at 200 years.

The mahogany tree is most abundant and found to the greatest of perfection between latitudes 11 degrees and 23 degrees, 10 minutes north. Within these parallels lie Jamaica, Cuba, the Dominican and Haitian republics, parts of Columbia and Venezuela, all of Central America, in which is included the mahogany areas of Honduras, and the lower part of Mexico. The mahogany found nearer the equator than the limits given is not usually of such a fine quality as that found within this belt. Exception may be made to small areas in Panama and to the more recently exploited sources of supply in Africa. Very fine timber has been exported from Nigeria within recent years, especially since the almost denudation of many of the older sources in the West Indies, but even Nigeria lies north of the equator, and, to that extent at least, follows the rule. It is therfore a curious fact that very little mahogany is found south of the equatorial line, although climate and elevation may in many places seem to be quite suited to it.

Two trees to the acre is a liberal estimate for mahogany "finds." More frequently, perhaps, only one tree will be found over a larger stretch of territory, and one instance is on record where a company, after getting a concession to cut the timber within an area of 40 square miles, found only 60 trees, an average of less than one tree to 400 acres. Elevation, too, is an important factor in the tree's value. It prefers low-lying, moist, rich, almost swampy land. Good specimens have been found as high as 1,500 feet in Jamaica, where much of the wood came from, and where it was so ruthlessly destroyed. As a rule, however, it clings to the coast or the edges of rivers that have no great fall from their sources to their entrance into the sea. While transportation is not complicated by the problem of moving the giant logs down the mountain, the advantage is overcome by the fact that passage through the tropic jungle is costly and difficult.

The mahogany tree from an early period was used by the Spaniards for shipbulding. The first mention of it occurs shortly after the discovery of the new world, when Cortes and his companions, between the years 1521 and 1540 employed it in the construction of ships used in their voyages of discovery after their conquest of Mexico. In 1597 Sir Walter Raleigh found it excellent for repairing his ships in the West Indies, and from that time on for generations no hard wood could compare with mahogany in shipbuilding.

The wood was first imported into England in its unmanufactured state in 1724. For house construction it was rejected by the workmen as too hard, but its beauty attracted general attention, and shortly afterward it became the popular wood from which to make furniture.

Even as late as 1850 mahogany was commercially valued chiefly on account of its excellence in shipbuilding, but now a vessel of mahogany would be a marvel of extravagance and waste. Cutting the mahogany tree has made little advance in the last century. The methods now are as primitive as they were when the native Caribs felled the giant of the forest and dragged it to the water's edge for their canoes.

The season for cutting mahogany usually commences early in the rainy season, and from June to January the crew of workmen is engaged in the forest. The "Huntsmen" cuts his way thru the ticket to the tallest tree he meets, which he climbs, and from the top of which he surveys the surrounding country. At the cutting season the leaves of the mahogany tree are of a yellowish-reddish hue, and the accustomed eye can from a great distance discern the place where it will be found. He then descends and, with the subtle sense of the woodsman, goes directly to the spot he had located from his lofty point of observation.

A trail is then blazed by the others of the force from the road to the tree, and cutting is begun. The tree is commonly cut about 10 or 12 feet from the ground, some of the finest figures in the wood being thus lost, although modern saws and training have been able to save much of the timber formerly wasted. It takes the labor of two men the best part of a day to saw through a tree, and these are the highest paid laborers. Sometimes the trunk measures 12 feet in diameter, and it may be understood, therefore, that the task is by no means an easy one.

The roads for the trees have, meanwhile, been constructed. Logs are hauled from their place of growth to the river during the dry season, because at that time only is it possible to transport them, as the ground for all the rest of the year is too soft for heavily laden trucks. Much of this work is done at night. In fact, the felling of the tree is begun by the waning moon, partly on account of the superstition of the cutters, who have always been led to believe that moonlight offers the really proper illumination for such a ceremony; partly also because the experienced woodsman has demonstrated that the mahogany tree is then freer from sap, sounder, and of a richer color than when felled before the full moon. The practical reason for carrying on the more arduous labor at night is that neither men nor cattle could withstand the intense heat of the jungle through which the simple roads are cut.

The immediate destination of the loads hauled by the ox or mule teams is the bank of the nearest stream, for once the immense logs can be tipped into the water the most difficult task is then accomplished. It is always planned, however, to reach the stream about the beginning of the rainy season, so that there will be sufficient water to float the logs.

The usual facility with which mahogany can be sliced for veneer is, perhaps, the one characteristic which keeps it constantly in such commercial demand. Sheets of mahogany of wonderful thinness can be cut from the parent log with very little loss. In sawing there is the waste of sawdust to be considered, so by planing this loss is saved. With modern machinery upward of 200 sheets to the inch can be obtained from a log.

THE END.

COMMERCE

I come no more in grey disguise
With grasping hands and greedy eyes,
Living on larceny and lies.

No longer do my mighty host
Of ministers and servants boast
Of giving least and getting most.

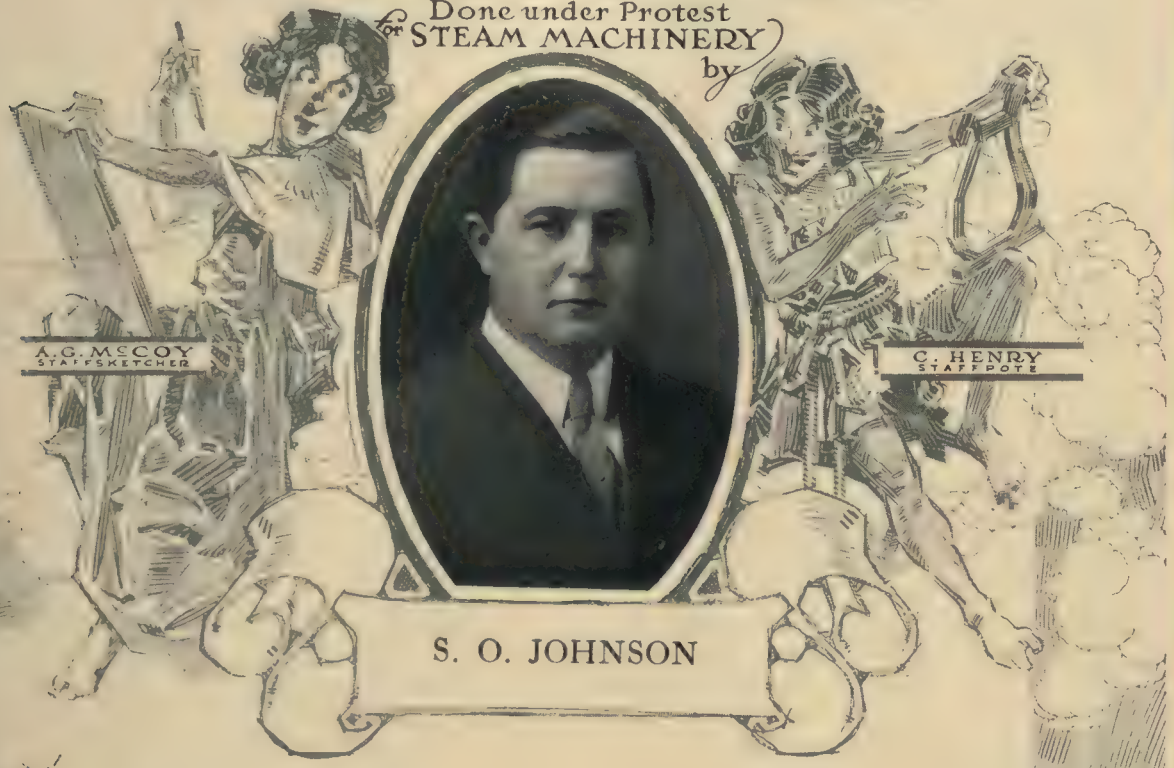
But now, with eyes greed cannot blind,
With open hands and willing mind,
I live in Service to mankind.

And hold him first among the rest
Who bears this motto on his breast:—
He profits most who serveth best!

C. HENRY.

Famous Loggers
in Picture & Pome

Done under Protest for STEAM MACHINERY by



S. O. JOHNSON

He was born in Minnesota
Where he lived to be a voter
While he built and ran a sawmill in Cloquet.
When they sold the mill, he wandered
(After two years had been squandered
At the U. of M.) out San Francisco way.

From the Great Columbian River
(Where they mine for salmon liver)
To the distant Odgen Line of the S. P.
He bought acre after acre
Of the biggest money-maker
In the country:—which was lumber *in the tree!*

Then he banked away his booty
For he heard the call of duty
From his father, who had bought into McCloud
Where a Manager was needed.
S. O. heard the call and heeded:—
And he ran both woods and sawmill for the crowd.

(Continued on Page 156.)

¶ High steam, glad feet and cranial development will reach to it in 1914; with apologies to the calendar fixers, several millions and 14.

¶ Useful efficiency will do more to blot out sin than all the pius palaver of the centuries; watch and pray but don't forget to DIG.

¶ The boss makes some allowance for the new engineer, but the engine don't.

¶ Slit skirts have spoiled the timid man's hiding place; now will he face the music?

¶ Journals are only well oiled when the metals do not touch.

¶ Solomon had five hundred wives and seven hundred lady friends but lumber was cheap and there were no Easter hats.

¶ Steam is always willing to work its passage.

¶ Civilization has polished off the rough corners of barbarism and made it easier to get away with the goods.

¶ Furnace drafts will go down hill toward the chimney if there are no short cuts.

¶ The enthusiast unscrambles his mistakes with final success; the pessimist by telling on some other fellow; the doctor buries his and the engineer re-babbits his on Sundays.

¶ The only difference between combustion, explosion, digestion and decay are time and temperature; the time multiplied by the rate evens this up.

¶ Successful men seldom lay it onto heredity.

¶ The power of steam is in proportion to its pressure but its heat is not, although heat is a primal basis of all power. One pound (weight) of steam at one pound pressure contains enough heat to raise 1146 pounds of water one degree, the same at 100 lbs. pressure will only heat 1184 lbs. of water one degree. This looks like a "by jiminy" box.

¶ Fate hands out many swats but is too busy to watch the effect; just grab another hold.

¶ The darndest thing in the world to queer good steaming is soot; hunts the places where it's hard to reach; here's to the soot fighter.

¶ Only the Clerics could stop the sun while they finished the job; Mr. Engineer has to let her go and make overtime.

¶ Humanity knocks when it gets in a tight place; machinery when it gets in a loose one.

¶ Keep too busy to be lonesome, too useful to be sad.

¶ Half of human selfishness is based upon the fear of future want; that's self preservation at long distance; the other half to keep up appearances; that's self preservation for current consumption. Only the yap yammereth when humanity obeyeth Nature's first law. Lettemalone!

¶ Nearly all machinery has a large margin of reserve strength; builders make it just as good as customers will pay for. Breakdowns mean something's been "put across" that didn't belong there.

¶ Only way to keep time from flying is to not use it.

¶ The cigarette and tight shoes are among the comic looking tragedies.

¶ Don't judge by appearances; steam, the greatest industrial force is invisible and works in a pitchy darkness that would make a blind black kyoodle dog in a dark cellar look like three weeks before the world was built.

¶ Gearing with even numbers of teeth, or even multiples get so darned chummy they don't last long; same ones get together too often.

¶ When somebody asks you why you can hold steam at 60 pounds without a drop and can't hold it at a hundred tell 'em the *get away* is faster at 100.

¶ The owner pays for a smoky stack; other things get benefits from it; gets back into Nature's cycle quicker. Laundrymen prosper where the smoke crop is heavy.

¶ The hammer was invented for the warlike swatting of cave dwelling neighbors; it has been elevated to a post of honor in keeping machinery in good health.

¶ The essential measure of value in machinery is how much it will earn; not the builder's cost.

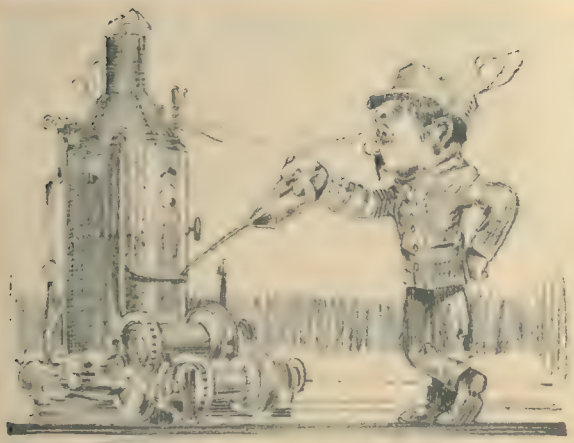
¶ We can't get a proper conception of mechanics without figgers and filisofy; aint no other animals in the game, but they cut a wide swath.

¶ The foot pound, heat unit and gravitational values are at the base of the whole business.

¶ The margin of safety ought to increase in proportion to the evils of failure.

¶ Kind words, kind deeds, grease, oil and graphite all make the going easier; kind words cost the least and stay put the longest. Don't need any automatic flipmagilders for the feed.

(To be continued.)



How to keep your Hoist Happy

Derrick Don'ts

Written for "Steam Machinery"
by A. E. Holcomb

1. Don't, when fitting irons to derrick timbers, try to bore a hole through a timber when it is lying flat down on another timber. Put a block under it to give clearance underneath.

2. Don't try to bore deep holes in timbers without frequently pulling out the auger and cleaning it of chips, otherwise time will be lost in trying to get out a choked auger.

3. Don't forget that a little grease on an auger will make it easier to turn in the hole.

4. Don't fail to bore a hole through your derrick sill timbers in line with the pin carrying the sheaves under the step so that the pin and sheaves can be readily removed when desired.

5. Don't forget when assembling your derrick to put washers on all bolts under the head, as even though not otherwise needed, they make good grips in connection with a pinch bar for withdrawing the bolts when necessary, as they can be shoved down the bolt as the bolt is drawn and thus kept close to the timber for the pinch bar to pry against.

6. Don't forget to keep your derrick step bearing constantly and thoroughly greased with hard oil.

7. Don't, after setting up your derrick or moving it from one location to another, pick up your boom and swing it until you have seen to it that the derrick is properly anchored.

8. Don't depend on someone else for the anchoring of your derrick if the foreman is not on the job. Inspect all the anchorages yourself.

9. Don't operate your derrick with the boom guys loose, as the backlash will either cause them to snap, shear off the connection of the bull wheel to the mast, or break the slewing cable.

(To be continued.)

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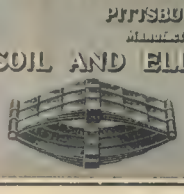
VANADIUM STEEL SPRINGS



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WRITE FOR BULLETIN NO. 57 "SHEAVES OF STAG BRAND MANGANESE STEEL."

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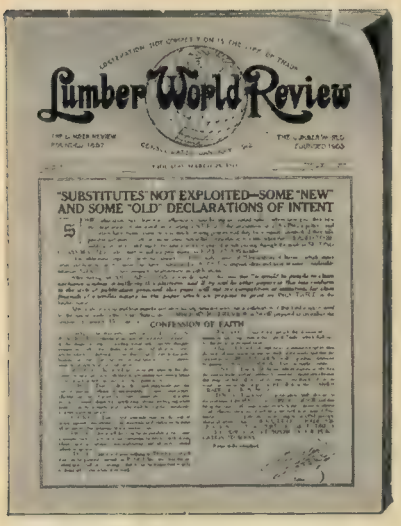

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Not long ago we published "A Milltown Christmas." Nobody could resist reading that story. We ALL read it in the office before it was published—Because it was interesting. And yet it had a lot of good practical information for the man interested in logging and logging camps.

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LUMBER WORLD REVIEW

BOLLING ARTHUR JOHNSON, EDITOR AND PUBLISHER
SUITE 1740 TRANSPORTATION BUILDING
CHICAGO, ILL.

Lumber Resources *of* Paraguay

Described for Steam Machinery by
Th. OSBORNE

MANY experts have predicted a serious shortage of the world's supply of lumber in the not-far-distant future, owing to the continually growing consumption of all classes of lumber. This prediction is well founded, as it is based on observation of the industry as carried on in Europe and to perhaps a smaller extent in some portions of America, where former reckless destruction, clearance of land for agricultural purposes, and forest fires have accounted for the destruction of millions of acres of forest lands.

Only recently several lumber producing countries have taken measures to protect and develop this important asset and, turning their attention farther afield, the vast timber resources of South American forests, more especially the dense virgin forests of the interior, have attracted the serious attention both of capitalists and Governments.

The physical peculiarities of the South American continent militate against the development of the lumber industry.

The mountain barrier comparatively close to the Pacific coast line causes both the river systems and the lines of communication to extend to the Atlantic coast, prcatically across the continent from west to east. That is the esential difficulty in making the lumber wealth of the interior forests available.

No reliable statistics can be obtained as to the extent of the supply, as the country has never been systematically surveyed.

Travellers who have visited and spent some time in the interior and have specially noted the forests both in Paraguay and the adjoining Republics, state that it is quite impossible at present to make any reliable estimate about the supply which could be made available with suitable means of communication, ample capital and thoroughly sound expert organization.

The more southern portion of the continent of which Paraguay is typical is very little known by the average reader and any looking out for fresh fields for lumber energy may do worse than study the capabilities from the lumber point of view of this region.

The country may be divided into two sections, the eastern and the western, the latter with an area of approximately 200,000 square miles and the former containing about one half that area.

In the western section an important frest tree is the Quebracho Colorado, the most important commercial variety of lumber produced

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in the country; it also occurs but not quite so extensively in Paraguay proper, north of the tropic of Capricorn. The name Quebracho is a corruption of the words quiedra hacha, meaning axe-breaker, from which readers will infer that it is of a dense hard nature, the wood is red in color. In Europe it is used in tanning industry and a very considerable quantity of logs are exported every year to several European countries.

For tanning purposes this wood, according to analyses, yields approximately 24 per cent of tanning substance and to economize freights several factories have been erected in Paraguay itself to enable the tanning material to be extracted. After being prepared it is packed into bags and shipped abroad. The lumber is of course used for other purposes. Engineering construction is the most important, for which it is extremely useful, due to its very great durability. It has been found of extreme value for railway ties, wood paving, staging and such like purposes.

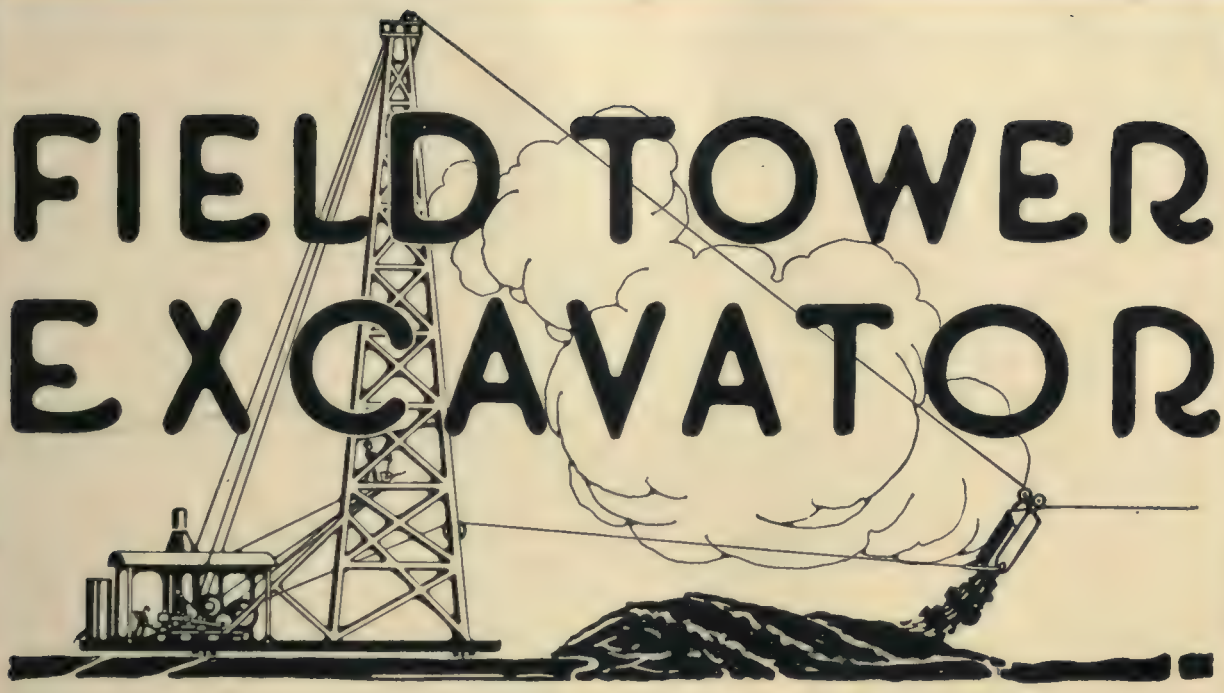
The only other hardwood occurring in this region in quantities is the Palo Santo or lignum vitae, which is dark green in color; it is scented, very resinous and is extensively used as a substitute for bronze bearings for shafts and similar requirements. In the denser forests, where this tree grows in great quantities, the natives burn it as firewood, as the smoke has the property of keeping mosquitoes and other insects away.

The Caranday, or black palm, is the only species of palm found there; it is a somewhat hard variety, which grows to an average height of 30 feet and is being used extensively both in Paraguay and in the adjoining Argentine Republic for telegraph and scaffold poles.

The western section appears to be less noteworthy for variety of timber than the other. In the more densely wooded eastern section covering more than 90,000 square miles of tolerably flat country the forests afford a much greater variety of valuable timber trees. Among those found may be mentioned the Curupay, Urundaymi and the Lapacho, all of them woods of exceptional hardness and specially suitable for bridge-building, harbor-work and other heavy construction where strength and durability are a necessity. The district also contains many lighter varieties of timber trees, such as the Cedro, Ibiraro and the Petereby, which have been found very suitable for furniture making and interior joiners' work of every description. The Cedro, a so-called Cedar, is for all practical purposes a mahogany and is very extensively used in the manufacture of cigar boxes. The Ibiraro is a close grained flexible wood, which has been found to be more specially suited for the construction of ships and boats and may be considered as a very good substitute for teak.

There are a great variety of other trees for which at present no use has been found, and others for which there is only a limited demand. Among the latter special mention may be made of Tatane, which is a yellow wood of hard, close

FIELD TOWER EXCAVATOR



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Portland, Oregon - 18th and Upshur Streets
Savannah, Ga., - - 501 Germania Bank Bldg.
Seattle, Wash., - - 522 First Ave. South

AGENTS CARRYING STOCK

A. Baldwin & Co., Ltd., - - New Orleans, La.
J. M. Carbine, Mgr. Machinery Dept.
Thos. L. Barret, Board of Trade Bldg., Louisville, Ky.
Brown & Sites, Co., 30 Church St., New York, N. Y.
Contractors Equip. Co., 18th and Upshur Sts., Portland, Ore.
Contractors Equip. Co., 522 First Ave. South, H. J. Armstrong, Mgr., Seattle, Wash.
Parrott & Co., 320 California St., San Francisco, Cal.
Parrott & Co., - - - Los Angeles, Cal.

CANADIAN AGENTS

Alfred Collyer & Co., Guardian Bldg., Montreal, Quebec
Dominion Equip. & Supply Co., Winnipeg, Manitoba
Taylor & Young - - Vancouver, B. C.

SELLING AGENTS—UNITED STATES

C. Taylor Handman, Merchants Bldg., Cincinnati, O.
Harris Bros., 310 Atlas Block, Salt Lake City, Utah
Chas. L. Kirk, 1739 Liberty Ave. Pittsburgh, Pa.
Reed & Duecker - - - Memphis, Tenn.
Geo. F. Smith, 810 N. Main St., St. Louis, Mo.
St. Cloud Iron Works - - St. Cloud, Minn.
Herbert N. Steinbarger, Sugar Bldg., Denver, Colo.
Sunderland Machinery & Supply Co., Omaha, Nebraska
W. P. Tunstall, 220-2 Arcade Bldg. Norfolk, Va.

SOUTH AMERICAN AGENTS

Pinsent, Mathews & Cia - Buenos Aires, Argentina

Hardware Supplies

Trident Decking Chain
Zenith Decking Chain
Missing Link Cold Shuts
Cant Hooks, Fid Hooks

Log Jammer Outfits
Simonds Saws
Special Saw Files
Saw Wedges and Hammers

Axes and Axe Handles
McLaren Sleigh Knees
Concave Sleigh Shoes
Logging and Tote Sleighs

Zenith Harness
Zenith Horse Collars
Horse and Camp Blankets
Camp Bunks
Springs, Mattresses, Pillows

Lumbermen's Hardware Supplies

For Making Camp
Cook Camp Outfit
Office Supplies

Warehouse Necessaries
For Bunk House
For Blacksmith Shop

For the Barn Boss
For Road Work
For Putting in the Logs

For Hauling
For Driving
For Sawing

Marshall-Wells Hdw. Company

PORTLAND
SPOKANE
DULUTH
WINNIPEG
EDMONTON

grain and is specially suitable for clothes boxes and similar purposes, as insects dislike it and are kept away.

The main difficulty at present to the development of the forest wealth of Paraguay and the surrounding areas has been and will probably continue to be for some time the want of transport facilities.

So far the work has been restricted to the forest areas within a short distance of the railways, or within easy haulage of some waterway, either the main rivers or their navigable tributaries.

The Paraguay is a splendid river, navigable right into the interior of the country all the year round for steamers with a capacity of 1000 tons. Although the river system is a very extensive one, only a relatively small proportion of the forests can be worked by them; the industry will therefore have to rely on railways for its development.

It is noteworthy that while Paraguay possesses such extensive forest lands the adjoining Republic, Argentine, has endless expanse of prairie land quite bare of useful trees. The one Republic is therefore the best and nearest market for the other. These open pastures are occupied by cattle farms and villages both of which require large quantities of lumber, both for building and fencing purposes.

THE END.

FAMOUS LOGGERS

(Continued from Page 149.)

Here for three long years he tarried
(In the meantime getting married)
Then he pulled up stakes once more and moved to Weed.
Now his wanderings are over
And he lives in Klamath clover
With some millions more than you and I will need.

Yet despite his mounds of money
All his men would think it funny
If they didn't find him standing at his post
Fall and winter, spring and summer:—
He's a self-propelling *hummer*
Is this Logging-Lumber Expert of the Coast!

C. HENRY.

Buying Lumber

Then you want to know all about western prices for fir, redwood, spruce, sugar and white pine, redwood and cedar shingles!

SUBSCRIBE FOR AND READ

PIONEER
Western Lumberman

$2.00 per year
Published twice-a-month

311 California St.
SAN FRANCISCO

$2.00 Secures the Combined Services of More than Forty Specialists Working in Your Interest For One Year.

Whether you are Mill Operator, Superintendent, Sales Manager, Woods Foreman, Logger, Retailer, or whatever position you occupy in the lumber industry, you will profit greatly by securing the services of these people. And all you need to do to get this force of specialists working for you is to become a subscriber to the LUMBERMAN.

Correspondents in every important lumber center give you the market conditions —facts that have a direct as well as indirect bearing on your trade.

Editorial writers study your business and things pertaining to it and review them for you.

Artists and engravers picture the important and instructive things in lumberdom so that you may, at a glance, see what is happening in the industry about you.

Special writers with a knowledge gained from years in the harness, give ideas on all phases of the manufacture and selling of lumber.

Then there are the advertisers who are spending thousands of dollars to acquaint you with the time and money-saving appliances used in the modern lumber industry.

The results of the combined services of all these specialists are presented to you in a clear, concise and interesting manner, twice a month for $2.00 a year.

Write for free sample copy. Advertising rates upon application.

The LUMBERMAN ST. LOUIS

HEISLER
Geared Locomotives

Are especially adapted for heavy hauling on steep grades, sharp curves and uneven tracks. For logging, switching and pulling on main lines, mills, furnaces and industrial purposes.

Just off the press, new detailed descriptive catalogue 108.

Heisler Locomotive Works

ERIE, PENN., U. S. A.

READ IT, because—

You get it *every week*.

It will keep you posted on markets, *every week*.

It will give you the news of the entire lumber world, *every week*.

It contains dependable and authoritative editorial comment and opinions on matters of interest to the lumber trade *every week*.

Its many departments and special articles provide a veritable compendium of instructive, informing and entertaining lumber miscellany, *every week*.

Its able staff of editors, reporters and correspondents, and its exceptional news gathering facilities enable it *every week* to present such a comprehensive and dependable review of all matters pertaining to the lumber trade as to have earned the title of "World's Greatest Lumber Paper".

ADVERTISE IN IT, because—

It reaches practically ALL the trade.

Its advertising pages are considered the leading directory or guide to "Where to Buy".

It will give you MORE circulation than any two other lumber papers combined.

It will give you BETTER circulation. The average credit rating of its subscribers exceeds $100,000 each.

You will get inquiries from firms who will make the most desirable customers, many of whom could not be reached through other media.

Its thousands of readers BUY it and pay $4.00 a year for it IN ADVANCE, thus guaranteeing a bona fide circulation among people who want the best and have the means to pay for it.

Ask for sample copy and further particulars.

American Lumberman

World's Greatest Lumber Paper

CHICAGO

There's many a trip 'twixt the knight of the grip—

and his prospect before sufficient *confidence* is created to culminate in a sale.

—Confidence in the man partly, but mostly in the house he represents.

That's why sending salesmen is the most expensive way to develop a new territory.

It is the invariable practice of great national advertisers to do this development work with print-and-paper salesmen whose expense-account amounts to a two-cent stamp apiece.

They have found that when the confidence-inspiring and desire-creating facts are properly presented thru the medium of printer's ink they are every bit as effective as flesh-and-blood salesmen at about one-fifth of one per cent of the cost.

They send the flesh-and-blood salesmen after the introductory work is all well done and since he is a real salesman he comes away from this *first* visit with a good order eight times in ten.

—Because the prospect already knew the house and believed that it could be of some decided benefit to him.

This is the power of print in salesmanship—that it will create confidence in your business in the minds of those who have never seen you or your salesmen.

But such printed salesmanship must be sincere, continuous and confidence-inspiring to be successful.

Your sales department *plus* our service department *plus* our printery (which last is a mechanical department and has been made as nearly perfect as only such departments can be) all working together, will produce printed salesmen with brains and business-pulling power for *your* business.

There needs only that we get together!

M. I. Stewart Company

A RELIABLE SOURCE OF SALESMANSHIP IN PRINT

DULUTH:—"Great Port of the Northwest."

Steam Machinery

Vol. 2. No. 6.

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A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

for

THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER

MODERN LOGGING IN MOTION PICTURES

(See Page 167)

A Monthly Magazine of Men, Machinery & Methods

STEAM MACHINERY

DULUTH MINN.

Charles H. Mackintosh Managing Editor

Our Covenant with Our Readers

We absolutely and unconditionally guarantee never to publish in our columns advertising matter of a fraudulent or misleading nature, nor to accept copy from any firm whatsoever until we are satisfied beyond all possibility of reasonable doubt that such firm is in a position to live up to the letter of its proposals and has done so consistently in the past. This we do, not because we are better or more moral than other magazines of our day, but because we conceive the true purpose of a magazine to be service to its readers, and we would serve well in order that we may be well served.

STEAM MACHINERY PUBLISHING COMPANY

SUBSCRIPTION RATES:

One Dollar a year to any part of the United States. One Dollar and Fifty Cents to Canada and foreign countries.

ADVERTISING RATES:

Rates for advertising in the columns of STEAM MACHINERY, together with a detailed description of the *quality* and *quantity* of circulation, will be sent promptly upon request.

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OUR EDITORIAL NEEDS.

"STEAM MACHINERY" wants and is willing to pay for the co-operation of its readers in editorial and reportorial work.

We want to keep abreast of conditions in the logging, contracting, excavating and railroad building worlds; giving our readers the first news and the true news about labor saving methods in their respective fields.

We want to know what the men behind the machines are doing to cut costs and increase efficiency in getting logs, moving dirt, laying and lifting track, caring for their machines and so forth.

We believe it will profit the men who are doing things to let us publish the evidence of their efficiency; we know it will benefit the industry as a whole to read reports which will have a tendency to increase practical knowledge and kindle ambition.

We know that the man who has these facts is not usually a writer, but we have plenty of pen-pushers who will attend to dressing up such articles for publication.

We want and will pay for the *facts*, without caring a cuss about the form they come in, just so our not-very-intelligent reporters can get the point plainly and work it into perfectly pleasing paragraphs for the printing press.

We will pay according to the value of the idea, such value to be judged by the amount of space our editorial staff finds it worthy to occupy, at five dollars the full three column page of ten point type, excluding illustrations, for which we will pay one dollar apiece.

THE PUBLISHERS.

The Editor Thinks

WE ARE unalterably opposed to fighting in any form, but if you should ever be forced into a position from which honor forbids retreat, the secret of success is to hit hard and to hit first and then pay the Other Fellow's hospital bill like a gentlemen. ¶ Just so long as there are fools in the world there will be fighting; for a fight is always a fool's argument. ¶ Nothing is proven by it, nothing disproven. ¶ Because you can beat Jones into a globule of pained protoplasm, does that disprove his contention that you would have been a horse-thief if you had the nerve of a cornered caterpillar? ¶ It does not. It proves only that Jones is weaker or slower than you physically, at the same time proving that he has you trimmed mentally or you would have remembered in time that his grandfather was hanged for stealing sheep and you would have countered with that fact instead of with your blow. ¶ Since the measure of a man is in his mind, you have succeeded in proving Jones the better man by proving yourself the better animal. ¶ But if a fool should argue with you in the presence of other fools, it may well happen that you will find no honorable retreat without a blow. ¶ Then remember the secret of success—to hit hard and to hit first. ¶ It is the secret of other successes also; it is the secret of success in business and in all the affairs of life. ¶ He who hits hard and hits first gains an advantage from which the other can scarcely recover. But to hit hard you must have aim, or your first blow may be your last. ¶ Apply this maxim to your everyday affairs; this plan of hitting hard and hitting first! ¶ Suppose, instead of waiting to be told, you jump right in and *do*. ¶ Suppose, instead of waiting till you must, you do it now. ¶ That way lies success. ¶ Men are not paid for what they do by force but for what they do with force, and a man must invite responsibility before it will be pressed upon him. ¶ Energy and Initiative are the two hardest-sought and highest-paid virtues on earth. ¶The world waits for the man who can and will hit hard and who knows why and what and where to hit. ¶ If you are not that man you *may* be, because a man's mind can make of him what he wills. ¶ If you have the courage to throw your whole weight upon the lever of the days task, seeing not how little but how much you can do, you have gained the first step towards the forming of a habit, the fruition of which is inevitable success. ¶ So many men are content to do the least possible, waiting to do more until they are paid more; never realizing that a man is paid for what he does and not for what he might possibly do if he had the gumption to try. ¶ Again, the time-serving habit is a true habit—it will grow on the victim if he yields to it too often, making of him at length a constitutional time-server, unfit for any other end. ¶ One man in a million gains fortune through luck. The others will die poor unless they hump themselves. ¶ Why gamble with your life on a 999,999 to 1 shot?—You might risk a nickel at such odds in a horse-race, but never your whole fortune. ¶ Energy and Initiative—these are yours for the making, and with them you shall win

the whole world if you want it. But you can't start towards them tomorrow or next year if you can't start *now*.

△ ⊢▽ ♂

IF YOU DON'T LIKE YOUR employer—refuse to work with him. ¶ Be sure he will do the same if it becomes necessary to his comfort or prosperity! ¶ Every man has a right to say who he will work with and what he will work at unless he happened to be born a Slave—which was not his fault—and elected to remain one—which *is!* ¶ —This axiom applies equally to employer and employee, but mostly to the later. ¶ This is true—the emerald-islism aside—because the employer is more apt to *know* where he stands in the Scheme of Service. He does things on a scale that bulks big in the sight of his fellows and of himself. He directs the work of tens, hundreds, thousands of men, and adds his *personality* to everything they produce. ¶ The man who works for himself (but *every* man works for himself in the final analysis) directing only his own efforts, is not so apt to see the effects of his labor upon his environment. If he be not careful he will come to under-rate his value to the world. And this is the first step towards under-rating the value of his task. ¶ Who shall say the cylinder is more important than the pistonrod or the shaft than the pinion? ¶ Break away even a single nut and the duration of the whole is impaired. ¶ So it is with Societies for Service—as all successful businesses might better be known. ¶ It is easier to replace a faulty nut than a cracked cylinder, but if each remains true to its task there will be no need to remove either. Yet if either fails, it *must* be removed and replaced. ¶ All businesses are built on the duplicate part system fortunately, because God seems to work to standardized jigs and templates:—the material may be improved but the master patterns are always the same. ¶ Know then, who ever you are, that you *can* be replaced—and will be if you fail, or your engine must destroy itself. ¶ No man is ultimately exempt from the necessity for making good today and today forever. If he is an assistant in some department and fails to work well his department head will eventually *get* him in self-defense if for no other reason. If he is the department head and tries to run on the batteries, the head of the house will push him into the discard, also in self-defense if for no other reason. If he is the head of the house and yet falls asleep at his desk, the whole force will slacken, slacken, slacken down until at length *his customers* will get him, in self-defence and for no other reason. ¶ You can't beat the law of Service. You must *get* it or it will get you!

△ ⊢▽ ♂

NATURE ABHORS A vacuum. ¶ Hence, when she runs out of grey matter temporarily she fills men's thought-tanks with mud. ¶ Grey-matter being the costly and slow-growing product of constant industry, it is not surprising that there are millions of men with more or less muddy minds about the world of today. ¶ Words and actions are the physical expression of thought; therefore the muddy mind may be detected in the character of these symptoms in the alleged Thinker. ¶ Mud usually betrays its mental existence thru expression of envy, greed, fear and hate; thru a mean and narrow outlook on life, and thru a magnified egotism. ¶ The last is most noticeable in petty excutives whose value is fixed by their titles instead of in their work. ¶ It is a curious but well-known fact in dealing with this class of men-with-muddy-minds that those of least worth usually think the most of themselves and that those least

worth approaching are often the most difficult of approach. ¶ You don't have to insist on your importance if you really have any: neither will any tit-bit title help you to impress it on the minds of thinking men. If you must wear a title, let it describe your function in the world rather then feed your vanity. When, as the reward of long and plodding service, you are allowed to append "Assistant Such-and-Such" to your signature in lieu of a raise in pay, endeavor to surpress the idea that you have had so much per centum added to your dignity and importance in the world. ¶ Neither have you been played for a sucker. You have been paid in that tinsel which men of little minds will always value more than money, and so you have been *better* paid than could have been done with money. ¶ The intelligent employer will always pay his helpers in accordance with his knowledge of their minds. If they are mental children he will pay them partly with toys, knowing that such will receive greater appreciation than any other form of pay. ¶ If they are Men, he will treat them as such and pay them in accordance with their value to his business. Title and greater pay together come only to the man who does not care a snap about the first except in so much as it summons him to a wider or a loftier field of endeavor. ¶ If then you would be truly important, don't worry so much about impressing it on others. When all is considered, you can't get away from the fact that there are sixteen hundred and fifty-three millions of other men on earth, each of whom knows himself, in his inner heart, to be of far greater importance than you!

♂

A MAN IS SHUT IN ON THE one side by his ambition, on another side by his beliefs, on a third by his industry, on the forth by his environment, above by his love and beneath by his lusts. ¶ He may approach more nearly to his beliefs, he may advance his industry or be drawn more strongly by his environment; but to whichever of these four he advances he will none the less be shut in by the other three and will remain always upon the same plane. Only insofar as he does any of these things toward his lusts or towards his love shall he sink or rise in the eternal scale. ¶ Not even labor can ennoble that which is done to an ignoble end, only thru love can a man hope ever to become divine. ¶ He stands today upon the stunned lusts of the past with an infinity of unattained but attainable love above him. He may revive the lusts of the past and sink to that degree, or he may overcome some of his present lusts and rise upon them as they sink beneath his feet. ¶ For lust takes account of the bodily welfare alone; love looks only to the welfare of the eternal soul which dwells among every man. ¶ You can be harmed only thru your soul. God will never harm it. Man cannot. You have, then, only *yourself* to fear.

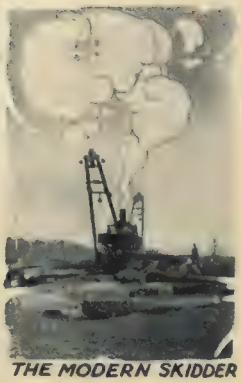
♂

NO MAN CAN HELP ANOTHER with material things: he can help him only with inspiration which will help him to help himself. ¶ When a man receives an unearned dollar he automatically drops a dollars worth of something—ambition, self-respect or the respect of his fellows. ¶ But when he receives a mental tonic giving him the will to do a dollar of his own, he has gained the true and utter value of that dollar; while the donor has grasped the supreme opportunity of turning a little Love into Labor and so fixing it for all time.

THE MOVIE MAN

Modern Logging in Motion-Pictures

Done Described & Drawn for STEAM MACHINERY by S. MacHINERY



THE MODERN SKIDDER

SETTING aside the argument as to whether the sun revolves around the earth or the earth around the sun—which we seem to remember was satisfactorily settled some little time ago—there can be no real doubt that the earth *do* move!

For let us consider the Salesman, how he sells today in comparison with his methods of half a century ago.

Then he would wait in his cobwebby cubby-hole until you made up your mind what you wanted and came in to tell him about it.

After which he would show his superior knowledge of the facts by trying to argue you down and prove that you didn't want what you thot you wanted:—or at the best he would merely write down to your dictation with a pen made from the angel-sleeve of a departed chicken, salting the whole down with sand from a pepper-box.

After munce and munce and munce you would get just what you didn't want anyhow and might as well have accepted it in the first place.

But nowadays:—

The modern Merchant-Missionary starts out with the idea of proving to you why you ought to want what he wants you to want.

He comes to *your* office and he comes armed with statistics enough to stop the healthiest clock.

Testing out the Louisanna Light.

More than this, he has pictures and printed words sent ahead of him until the mailman staggers up to your Principal Entrance loaded like a despairing dromedary among the shimmering sands of Sahara.

More than this again, he can come to you now and show you the biggest and heaviest of machinery in operation right in your own office.

—Talk about Magic!

Why if Merlin (the master magician at the court of King Arthur, who had 'em all with their eyes hanging out on their cheekbones in those pre-publicity days) were to butt into modern business he would be given the Positive Pooh-Pooh six times on his first half dozen sallies!

"Hownell do *I* know your machine'll do the work?" inquires the gentleman in St. Louis, Mo.

Muey pronto the Modern Missionary whips one of mother's table cloths out from his grip, tacks it on the perfectly pale wall, pulls down the shades, unloads his portable projector, feeds it full of film and starts to turn the crank.

And the gentleman in St. Louis finds himself watching the machine in question *doing* the work, apparently right on his office wall but in reality way over in the next state but two.

For Moving Pictures have in-

vaded the world of business and prospective purchasers can now be *shown* the reel goods right from their own office chairs.

Just to give you an idea of how a motion-picture of an industrial subject is made, we will let you go along with S. MacHinery and help take some pictures of Modern Logging.

The salient idea in these pictures will be to show Clyde self-propelling logging machinery working in the piney woods, but there needs a certain continuity to make the thing interesting.

To show a skidder and loader at work doing the same thing over and over would be like sending your prospect copies of the same catalog every day for a month.

He would just naturally lose interest after a little, fall asleep and snore all thru the rest of the service.

So we'll take the whole durned thing, from virgin forest to lumber piles, running it as the continuous story of "Modern Logging."

Which will be the best concern to have make these pictures?

The secretary of the State Fair Board said "Raths & Seavolt of Saint Paul:"—he has had a few miles made himself and orter know.

So we'll take a chance and arrange to have Ed. Seavolt meet us at St. Paul and go on along down into the Sunny Southland—him and his thousand-twenty-six-dollar camera.

But, huckleberries on a hemlock!—if we aint forgotten to decide *where* we'll go and take these pictures!

Lessee.

In the January - February - March issues of STEAM MACHINERY for 1913 we told the tale of longleaf logging a la Industrial Lumber Company at Elizabeth, La.

It seemed to agree with our readers since none of 'em disagreed with it:—what's the matter with doing it over in movies? Let's!

Soo Line, Rock Island, Iron Mountain and then some more Iron Mountain! Gee but Elizabeth is inconveniently located with relation to Duluth!

It took us nearly sixty hours of consistent and consciencious travail to cover the intervening country, which is just eight and forty hours longer than it should have been to preserve the Decalog intact.—And what we did to the Decalog was a crime!

Staging Scene One—"Sizing up the Standing Timber.

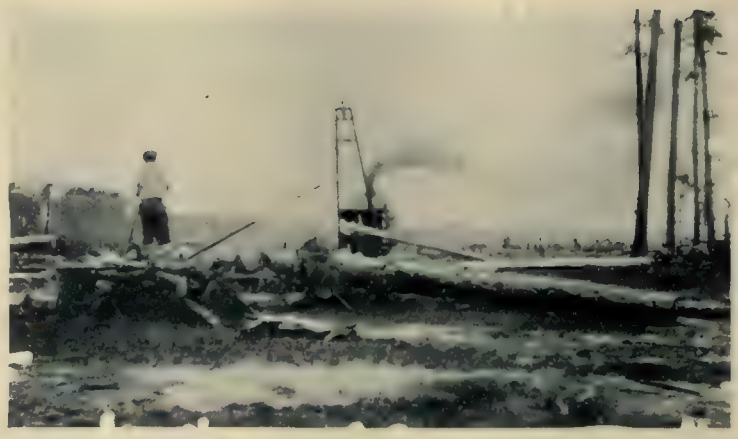
However we got there at last, all of us together with our thousand-twenty-six dollar camera, arriving at the Oakdale depot prexactly at twelve six P. X. on the first Sabbath in April, to be met by a Reception Committee from Elizabeth.

A Reception Committee is a thing that says howdy and arranges for a nigger to carry your grips.

If there is no nigger handy it arranges to have you carry them, which is easier on the Reception Committee.

However our Reception Committee included also a loose locomotive which took us, together with all our paraphernalia, impedimenta, baggage, luggage and what not, over the Santa Fe into Elizabeth.

FELLING
TIMBER
S. MacHinery
GIVING AN IMITATION OF A CAMERA MAN
MEASURING
SAWING INTO LOGS



"Bringing in the Logs."

We rode on the front running-board, from whence an excellent view of the scenery might have been obtained: *might* have, because S. MacHinery had on his new sundaymebbegotomeetin Balmacaan and was altogether too much occupied in keeping its loose ends out of the oil, grease running gears and such to pay much attention to scenery.

On the way to the Loader.

Arrived opposite the Hotel de Elizabeth, we shrieked to a standstill and portaged our packages over to said caravanserai, where we let the doctor tempt us in to dinner.

After dinner, Seavolt fed a few feet of film into his hungry thousand-twenty-six dollar camera and went out to make a test exposure.

This being Sunday he was able to expose a large part of the population, all of whom posed rigidly in front of his machine, fearing to move lest they should fog the film.

A dark-room having been hastily improvised out of the office safe, the test pieces were developed and the experiment pronounced a prodigious success.

All things were then set in readiness for the morrow, after which the entire party adjourned to the first baseball game of the season.

Last season, Elizabeth went on the supposition that when baseball interferred with business the latter lost out.

This year they have put the reverse English on the ball and in consequence the game was not so much, Ty, not so much!

Next morning, shortly before Phoebus Apollo rose to hear the cocks crowing, S. MacHinery and Ed. Seavolt might have been observed hoofing it down the Santa Fe tracks into the dim distance, headed for the piney woods and their skiddern-loaders.

Thereafter, for four days including Wednesday when it rained all day and they didn't do a thing, they tramped hither and yon, hither and yon, grinding our yards and yards of negative from everything in the woods to everything around and in the mill.

Pieced together, it made the following masterpiece of moving art:—

"MODERN LOGGING"
A Three-Reel Feature Film
Showing
Clyde Self-Propelling Logging Machinery
Working in the Woods of the
Industrial Lumber Company
at Elizabeth, La.

Part One.

The opening scene shows the Woods Superintendent and the

Loader preparing to spot own empties.

Saw Foreman sizing up the standing timber and deciding where to clear a right-of-way for the first railroad spur.

Along the spur when laid, will travel the Clyde Skidder and the McGiffert Loader with its trains of empty and loaded log cars. After all this timber has been cut, skidded, loaded and hauled away, the track will be pulled up piecemeal and transported to the next location.

Feeding empties thru loader.

Logging railroads are like no other railroads on earth. After the trees have been cut off the right-of-way and some of the worst stumps blasted out, eighteen cross-ties to the rail-length are thrown on the ground just as it is. Then comes the steel gang, laying sixty-pounds-to-the-yard rail on these ties, bolting them together and spiking them, often only one every second tie. After that, the track is ready for service.

After a panorama of the long-leaf yellow pine forest, the operation of felling is shown, two splendid trees being selected for the demonstration.

The timber is cut so as to fall away from the track whenever possible, as there is less chance of a hang-up in skidding a log-big-end first.

Next comes the operation of trimming, measuring and sawing the tree into logs of from sixteen to forty feet in length, using everything down to eight inches in diameter.

A panorama of the forest after the sawyers have finished their work suggests the aftermath of a tornado.

The scene changes to the railroad-track, and the Clyde Skidder is seen propelling itself into the picture. Coming to a halt, guy lines are carried out on each side of her two booms and made fast to stumps beside the track. These guys are contained on steam driven drums and are tightened under power.

Meanwhile two men directly in front of the skidder are observed walking towards the camera, carrying light lines over their shoulders. These are called setting cables, one being sent out from each of the four corners of the machine. They are passed thru blocks some five hundred feet out in the field opposite to the boom, carried over parallel with the track the desired distance and passed thru blocks again, after which they are returned to the machine and made fast to the outhaul cables.

The setting lines are now rewound on their respective drums by the engines, carrying the outhaul cables out around the quadrangles of felled timber and re-

DUMPING LOGS INTO POND

ROLLWAY & BANKED TRACK AT POND

turning them to the skidder. The setting lines are then unhooked and the outhaul cables are hooked direct to the skidding cables at the point of juncture with the tag-lines some sixteen feet above the tongs.

Rewinding the outhaul lines, the skidding lines and tongs flash out down the skidding trail at a speed of a thousand feet a minute.

The work of yarding the close-in logs now commences, logs being shown coming in on each side and both ends simultaneously.

Most of them deck themselves parallel with the track, but occasionally the decking lines are called into play to swing a log around in line. These lines are operated by the unhookers while the tongs are going out for more logs, so that no time is lost in manipulating them.

The next operation shown is that of flinging the skidding tongs to a log lying at some distance from the skidding trail. This is done by alternately holding in and releasing the outhaul, setting the tag-line (from which the tongs are suspended) swinging. When the swinging tongs have arrived opposite the log, the operator slacks away suddenly on his outhaul, dropping the tongs close beside the mark.

The tongs are now set on the log, which is skidded in to the log-deck.

The next scenes show the operation of changing over all four lines to work on one side of the track.

This is often necessary when the timber on one side is scattered and soon skidded while a great quantity of logs still remain on the other.

The crossover (as it is called) takes only five minutes as handled by J. W. New, skidder-foreman of the machine photographed.

While skidding proceeds on both sides he has the setting lines from the side where skidding is slim taken out around the logs on the side where skidding is heavy and brot back to the outhaul blocks beside the track.

Now, when all logs are skidded on the slim side, all that is necessary is to unhook the outhaul lines and wind them up to the outhaul blocks beside the track where the setting lines are awaiting them.

The outhauls are then passed thru their blocks in the opposite direction and hooked into the setting lines. When these lines are rewound on their drums,

the outhauls are carried out around on the same side as the other two lines and brot back to the machine where they are unhooked from the setting lines and hooked to the skidding lines once again.

From the time the last logs were delivered on the decks at one side to the time the skidding tongs went out after more logs on the other side, took just exactly five minutes—time enough to skid only three or four logs.

The concluding scene of the first part shows all four lines working on one side, bringing in logs at the rate of about two a minute.

Part Two.

Part Two opens with a general view of the logs piled beside the track ready for the McGiffert Loader.

The second scene introduces the loader with its wheel frames raised up so that a train of empty log-cars can be pushed thru it by the switch locomotive.

The loader is then shown pushing its own empties, to demonstrate its complete independence of other motive power than its own engine.

The raising of the wheel frames is next shown. This is done with cables attached to the end castings of transverse beams on the frames, which cables are wound on drums keyed to a cross-shaft revolved by means of a worm-gear and worm.

As these cables are wound up, the wheel-frames are pulled up to a horizontal position, letting the loader settle down on long shoes which terminate its four curved standards.

A spotting cable, contained on the front drum of the loader, is then carried under the machine and over the empty cars behind.

This cable is fastened to the drawhead of the last car to be loaded at that point and is given a half-hitch under the drawheads of each of the cars between it and the loader.

Thus, on rewinding this spotting cable, car after car can be drawn thru the machine into position under the loading-boom, the half-hitch checking each car as the rear draw-head emerges from under the loader.

The loading operation is next shown, also the manner in which toggle chains are swung over the load to secure it on its journey to the mill; after which the McGiffert Loader is shown lowering its wheel-frames and pushing a loaded train out of the switch to the main track, where

(*Concluded on page 186.*)

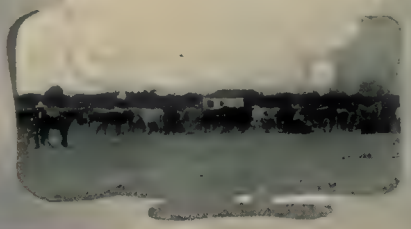
Texan Tetrameters

Perpetrated Particularly For
STEAM MACHINERY
by

A Remarkable RAMBLE Rendered into Rotten Rhyme *by our* Reporter

CONSTITUTIONAL COWBOYS GUARDING CAPTURED CATTLE

(Continued from April issue)



nd who is Fate that she should rob
His country of said shiny slob
Before his Kismet beat him up?
—Sure Rome was welcome to the pup!

Now, reading back, I must confess
My verse has started to digress;
Needs must I yank it by the ears
Back thru a scant two thousand years.

Whilst you and I prepare to go
Down to the verge of Mexico,
Whereat the folk, we understand,
Are long on irrigated land.

We'll grab the Frisco Brownsville branch
And beat it for a certain ranch
Which, barring Mexicans and wrecks,
We'll find somewhere near Mission, Tex.

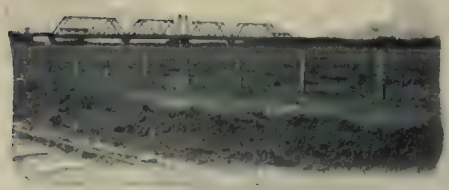
—Yet how our Mission friends would curse
If we should write them up in verse,
Leaving out facts full half the time
Because we couldn't find a rhyme!

Perish the thot!—In simple prose
We'll tell you elsewhere of what grows
Beside the Border River's brink
And how they give the soil a drink!

And meanwhile, reader, hand in hand,
We'll wander o'er the Rio Grande
Into yon Murderous Mexico
To see how much the papers know.

How often have I longed to see
This mighty river, broad and free,
Rolling thru palms, 'neath tropic skies;
Picturing it of Gargantuan size!

INTERNATIONAL BRIDGE



Believe me then, it made me sick
To find a little sandy crick
Containing scarce enough, I think,
To give one mule a decent drink!

Well, mebbe that's not strictly true:—
I should have waited till it grew
—As grow it does, the natives say—
From crick to torrent in a day!

Resigned once more to be the goat
I sought a young flat-bottomed boat,
Paying the sum of eight cents Mex.
To cross the Rio on her decks.

(She had no decks of course you know:
—Poetic license!—let it go!)
—Moored by the Mexicano bank,
I clambered up the landing plank.

And for the first time in their life,
My feet impressed those shores of strife!—
—Scarce had they dented once, when, lo!
A burly bandit wig-wagged "Whoa!"

I "Whoa'd" at once, for I admit
Not e'en a Mex could fail to hit
My bulk at scant ten feet or so
—And, once a corpse, I'd *have* to "whoa"!

He wore, that burly bandit did,
A crimson blanket, which half hid
The guns and knives—a score, no less,—
All bandits put on when they dress.

I told him I would make it hot
For Villa if he had me shot:
I swore I'd mentioned in my will
To pass the word to Brother Bill

If I was not returned intact,
Unmarred, unopened and unpackt,
Within a sennight of that day:
—*He'd* see that there was helterpay!

Unmoved, he pointed overhead
Where hung a board, on which I read
"A five-cent War Tax all must pay
Who cross this landing either way."

I argued not, but paid the tax
(I think he also wore an axe)
And then gave up my given name:
—Another bandit took that same!

ARMADILLO ··

CATHEDRAL AT MATAMORAS

A Burrough street-car took me down
Into old Matamoras town:—
Two burros pulled the bally freight
At half-a-mile-a-morning gait!

Thru streets of adobe houses white,
All barred and shuttered out of sight
We clattered down, our burro's feet
Ringing on blocks of *real* mesquite!

And now and then, on either hand,
We saw a warlike figure stand
With gun at rest and eyes on nose,
Neatly attired in Boy Scout clothes.

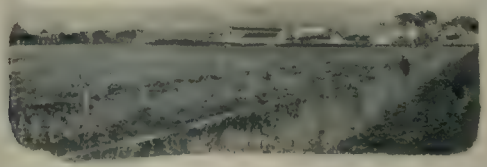
Others we passed along the way
It seemed had not yet drawn their pay,
For they were dressed in odds and ends
They'd borrowed from their scare-crow friends.

Each one was armoured to the teeth
And, rags or khaki, underneath
There beat a heart which yearned to gloat
O'er Huerta with a riven throat!

THE PLAZA ··

APPROACHING MATAMORAS

BRIDGE ACROSS RIO GRANDE AT MATAMORAS



HORNED TOAD

—A week or so e'er I came down
It seems that Villa took the town;
While Huerta's men were eating lunch
He gallumped up and shot the bunch!

The next act of the Bandit's rule
Was to invade the district school,
Pick out the "Federals" (Schoolboys all
And line 'em up against the wall!

He left these corpses scattered round
All over half-a-league of ground,
Until the Brownsville people came
And helped him feed 'em to the flame.

—This is the bandit we expect
To "save" his people, and protect
All foreigners within his gates
Whether from Europe or the States!

Why, even Drunkard Huerta could
Do more to help his country's good
If he were given half a chance
To check the rebel horde's advance!

Yet, were I Mex, I'd sooner far
Hitch on behind CARRANZA'S star:—
Judged by his *face* he is, I think,
A fairly decent sort of gink!

However, be that as it may,
The simpler and the surer way
Might be to "follow 'forty-six",
And chase 'em *all* into the Styx!

Meanwhile we'll let the matter stand
While we recross the Rio Grande:—
Tho' Matamoras may be fine
I'll take the Lone Star State in mine!

A night aboard the Frisco train
Brings me to Houston once again;
—Right here, with your consent, my friends
This rambling rhythmic ramble ends!

(The End)

CEMETARY AT MATAMORAS
NOTE LIGHTNING ROD ON MONUMENT

GEN· JESUS CARRANZA

KEEPING the CANALS CLEAN

On Texan Irrigated Land

Described for "STEAM MACHINERY" by S. MacHinery

After Inspecting the MISSION LAND IMPROVEMENT CO'S plant at Mission, Texas.

THERE are more than a quarter of a million square miles of land in the vast state of Texas. Obviously it would be impossible for me to spread my story over the whole of this vast area; I have therefore selected about forty-two square miles to wrap up in words and deliver to you, our readers.

In 1776 these forty-two miles were granted to "los primeros pobladores" (first settlers) of the new Satander Colony by the Spanish Crown.

Passing from them, piece by piece, they became the property of the Missionary Society of Oblate Fathers of Texas who had acquired the entire tract by the advent of the year of grace eighteen-sixty.

For forty-seven years, the Fathers worked upon it and improved it, building a mission church, stores, ranch houses, growing great crops on the banks of the Rio, raising splendid cattle and famous horses.

In 1907, John J. Conway purchased their entire holdings for the Mission Land Improvement Company, adding thereto somewhat from time to time until there are now forty-four thousand tillable acres comprised in this Mission Tract which is the subject of the story.

Located in Hidalgo County, Texas, in the Lower Rio Grande Valley, on the line of the St. Louis, Brownsville and Mexican Railroad, the tract follows the banks of the Rio Grande for seven miles.

It lies cradled at the heart of the famous Rio Grande Delta which borders the Rio and extends upwards from the mouth some sixty miles.

They tell me that, excepting only Key West, this region lies farther south than any other part of these United States.—Even sunnily semi-tropical Southern California is left four hundred miles behind in the bleak north by the rushing Rio Grande in its truly-tropic valley!

Hence it is that the average monthly mean temperature is by no means mean. According to statistics garnered from the U. S. Weather Bureau at Brownsville, I find that the following Fahrenheit degrees express the year-around state of the mercury at Mission. These figures are averaged over all the years since the station was established in 1846 and should therefor approximate what might reasonably be expected!

Jan.	58.3	July	83.8
Feb.	63.6	August	83.4
March	68.3	Sept.	79.8
April	73.6	October	74.2
May	78.5	Nov.	67.1
June	82.3	Dec.	61.9

—An average for the year around of 72.9° Fahrenheit, which is just about the temperature these sanitarians set as the proper point for the interior of our homes!

Mission now has a Weather Bureau of her own, by-the-way; it was established by the U. S. Department on January 1st, 1911, and has been a big boon to the farmers ever since.

—Tennyson's Island of Avilion —"where comes not any rain nor any snow, nor ever wind blows loudly; but it lies all happy, fair with blossoming orchard-lawns and bowery hollows crowned with summer sea"—had nothon Mission if you will permit the substitution of the Rio Grande or the Gulf of Mexico for "summer sea!"

Here truly they have that land of year-long summer whereof so many real-estate booklets have spoken in diverse tones.

Here a crop is harvested every month in the year, nor is there ever any waiting for more favorable weather:—It's *always* fair weather in Mission, where the winter's are warm and dry and the summer nights are cool and refreshing.

Hail, Blizzard, Snow, Cyclone: —all these be "persona raus mit 'em" (as our early Roman friends used to remark) in Mission.

So much so in fact that, were it not for the Rio Grande, the three pumping plants of the Company and a system of canals and laterals rivalling those on the planet Mars, the greater part of this wonderfully fertile soil would probably dry up and blow away.

As it is, with all of the aforesaid, the country has been made to blossom like one of Burbank's especial pets, producing crops the like of which were never before found in the agricultural history of the ages!

The soil is wonderfully rich in all the elements necessary to plant growth:—iron, magnesium, sulphur, nitrogen, potash, phosphoric acid and calcium; you will find them all properly proportioned among the land at Mission!

Unfortunately, plants have neglected to provide themselves with teeth; in consequence they are debarred from the pleasure of biting off what substance they require and chewing it up carefully at their leisure. They must have it dissolved in water which they may draw up with their roots as the heat of the sun sets up evaporation from their leaves. Set them in a storehouse of the seven succulent elements and, without water, they will starve like Bishop Hatto's peasants in the midst of plenty!

The average annual rainfall at Mission is only sixteen inches or so, altogether insufficient to slake the raging thirst of this sunbaked soil without leaving any for possible plant-growth. Hence water is the one crying need of the locality; without which—nothing, with which—everything *plus!*

The water supply is taken entire from the never-failing Rio Grande, whence it is conveyed by three lifts thru thirty miles of main canal and one hundred twenty miles of branches to every part of this thirsty soil.

The main canal averages eighty feet in width and has a six-foot waterway: the branches average twenty-three feet wide with a four foot waterway.

The intake pump plant on the Rio has one 48" pumping unit and two 36" units, having a combined capacity of some two hundred thousand gallons per minute.

This lift raises the water to irrigate the lower table of land, passing sufficient for the second and third tables on to the second pumping plant.

This second plant has one 48" and one 36" unit, handling all the water necessary for the second table and passing on the remainder to the third plant.

Here they have one 36" pumping unit which distributes the vital fluid all thru the canals on the last table.

The average slope from the head of this last table back to the Rio is 12' to the mile, giving a return velocity of two second-feet.—This is ideal, since a certain fall is essential to irrigation and yet when it reaches two and a half second feet it begins to cut the soil!

The lift at the Rio varies from 8 to 26 feet according to the water-level.

The capacity of the pumping units also varies, for a 48" unit, from 85,000 gallons a minute at low to 120,000 gallons a minute at high water. For a 36" unit the variation is from 35,000 gallons a minute at low to 50,000 gallons at high water.

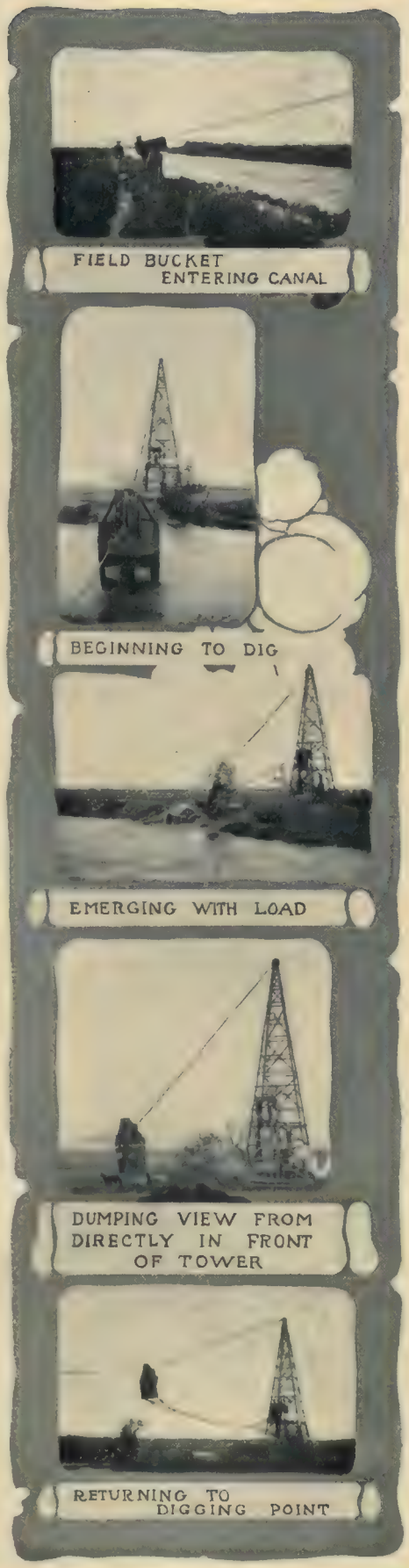
There is a twenty-seven foot lift at both second and third pump plants.

The company sells the water-rights with the land—including a proportionate interest in the irrigation system with each acre of land sold—so that eventually the entire system will be the exclusive property of the land owners.

Land sells at around $200 per acre with water-rights, two-fifths of the total amount being payable in cash and the balance in 1-2-3-4 and 5 years with interest at six per cent.

An annual upkeep charge, amounting to $4 an acre this year, is levied against all land—cultivated or not—to cover running expenses.

This amount covers not only the actual cost of pumping water but also of keeping the canals in repair and cleaning out the silt which is continually sifting into them. At one time it seemed as if this silt was going to destroy the entire system of irrigation thruout the district, since the dredges used to dig the canals originally could not be used to clean them.


FIELD BUCKET ENTERING CANAL
BEGINNING TO DIG
EMERGING WITH LOAD
DUMPING VIEW FROM DIRECTLY IN FRONT OF TOWER
RETURNING TO DIGGING POINT

INTAKE AT LIFT Nº TWO

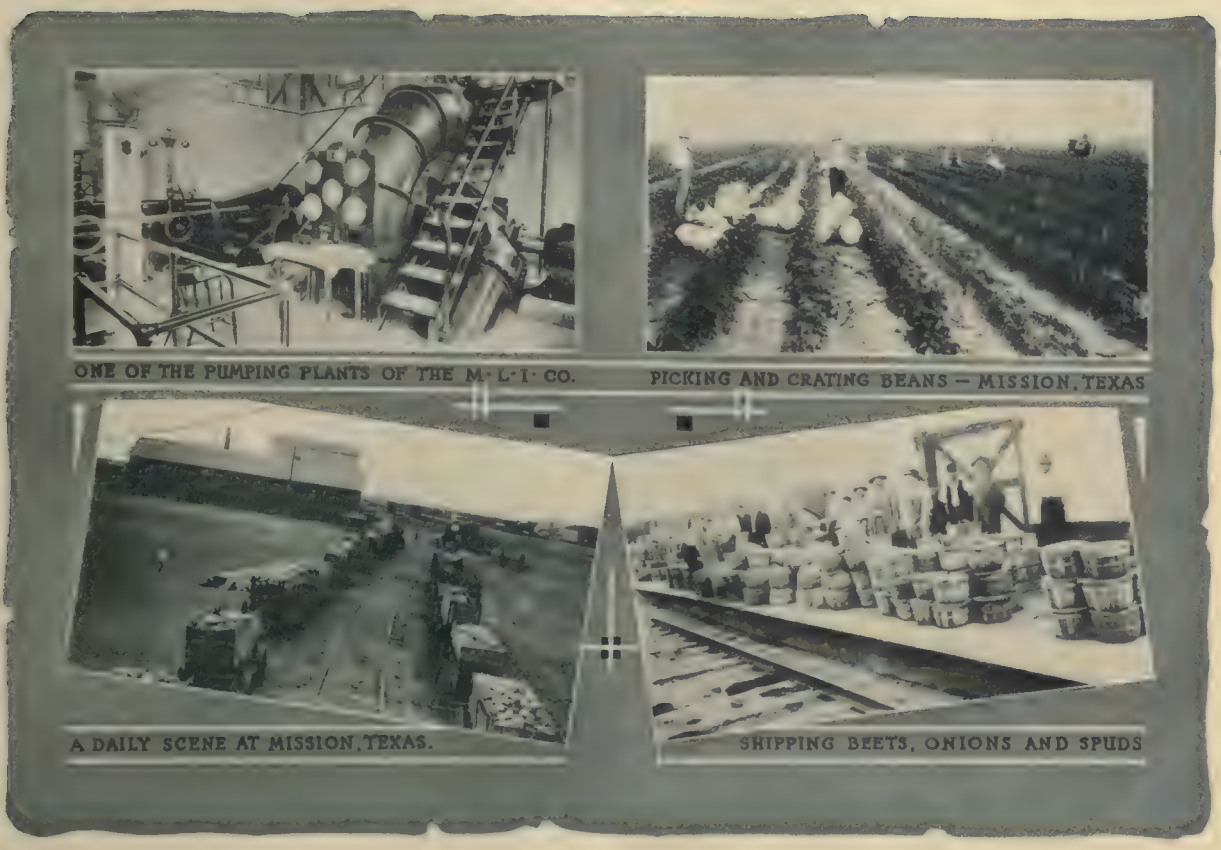
FARM HOME AT MISSION

PANORAMA OF MISSION, TEXAS.

CANAL BEFORE CLEANING

MAIN CANAL BEHIND SECOND LIFT PLANT

CANAL AFTER CLEANING



ONE OF THE PUMPING PLANTS OF THE M·L·I· CO.

PICKING AND CRATING BEANS — MISSION, TEXAS

A DAILY SCENE AT MISSION, TEXAS.

SHIPPING BEETS, ONIONS AND SPUDS

—This because they run thru culverts under roads or are bisected by laterals at about every hundred feet, cutting the working distance of a dredge down to a point where it would cost ten times as much as the property could pay.

At this point came Mr. Woodworth, superintendent of the Company's works, with the idea of installing Field Tower Excavators in this department.

These machines parallel their work, travelling beside it over their own tracks which can readily bridge a lateral or carry them over a road. In consequence they are not restricted to a single section of canal but each can cover many miles, travelling up and down as occasion requires, insuring perfect irrigation thruout the tract.

At the time of my visit the canals had not been cleaned since their completion, the Field Tower machine having but recently come on the market and no other type of machine having been found adapted to the work.

Time and trains limited the length of my stay on the operation until, after garnering the general information which I have passed on to you in these preceding paragraphs, I was able to make a careful investigation of only one of these remarkable machines.

They are all of the same type and size however, so a description of this one will do you every bit as much good as a life-history of each, besides being much easier on your eyes.

The machine itself consisted of a timbered tower rising eighty-five feet from the front end of a wide wooden platform on the rear of which was located a 60 horsepower, 10" x 12" cylinder Clyde engine having a 42"x 114" —150 lb. steam pressure boiler.

From the rear drum of the engine a 7/8" cable led over the top of the tower, passing over a large sheave boxed thereon, and thence down to a distant anchor-line on the other side of the canal. Upon this cable, which is known as the gravity line, travelled the famous Field bucket, with the construction and appearance of which most of my readers are probably already familiar.

Its distinguishing feature is the simple twin-sheave arrangement at the rear upon which rests its claim to fame. The gravity-line passes between these two sheaves which are so arranged that when this line is tightened the bucket is suspended from the upper sheave and returns swiftly down the line to the digging point.

The cutting angle of the bucket may be varied to any degree by manipulating this line.

The front drum of the engine carries the drag line, which passes thru a sheave (the heighth of which can be varied to accord with conditions) beside the operator's platform and thence direct to the crotch-line on the bucket.

The entire machine is mounted upon trucks having double-flanged steel wheels, travelling over steel rails on short ties, forming a portable track.

It is moved by means of a winch head on the engine with a line fastened to dead men set a hundred feet apart, enabling the machine to travel up or down in this distance.

The anchor-line (referred to

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in a previous paragraph) parallels the track on the opposite bank of the canal.

The gravity cable is made fast to this line by means of an automatic clamp which grips the line firmly when there is a pull on the gravity line, slackening off when the pull is released so that the clamp can readily be slid along the anchor-line always to oppose the machine.

A one-inch cable, some three hundred feet in length, fastened to dead-men at either end, is used for this anchor-line, which was located 80 feet back from the canal.

A one-yard bucket, having the back specially builded up the better to handle this character of material, was in use on the operation at the time of my visit.

With this they were taking some two thousand yards of slime a day out of the canal, working three eight-hour shifts.

They can get two bucket-loads a minute while operating, but the constant moving delays the operation quite a little.

Mr. Woodworth informed me that they are removing about 5¾ yards to the lineal foot of canal, making about 75 yards to the station.

They get an average yard and a half with this built-up bucket and so have to move about every twenty-five minutes.

At night the work is illuminated by gas-mantle lanterns and also by an acetylene search-light to throw a beam of light directly across the canal.

They employ on each shift:

One engineer or boss towerman.
One fireman.
Three men to help in moving, etc.
One anchor-line man.
One pump man.
One bank man.

The engineer averages about $100 a month and all the others around $1.25 a day each.

They burn mesquite wood as fuel, using three cords a day—one to each shift—at a total cost of five dollars.

They were about to change this to oil as fuel however, because of greater ease in handling and a more certain and even supply.

Mr. Woodworth expressed himself as being entirely satisfied with his machines, dwelling on the fact that there hadn't been the least trouble with them since they started work three months before.

He gave even stronger evidence of his complete approval when he informed me that he had more of them on the way from the manufacturers (Clyde Iron Works of Duluth) and proposed to put them on the job thruout his entire operations.

Before closing this article it is vital to the subject that we introduce Mr. D. W. Glasscock to whom you and I, reader, are deeply indebted for giving us easy access to the mass of information from which this our story has been evolved.

Mr. Glasscock is the business and financial manager of the Company's affairs; to him the wonderful business success of their emprise must almost wholly be ascribed.

Practically the whole of their present plan

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Geared Locomotives

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Just off the press, new detailed descriptive catalogue 108.

Heisler Locomotive Works

ERIE, PENN., U. S. A.

germinated in his fertile brain and was pushed to a successful completion by his indomitable energy and resourcefulness.

But for him this gardenland might have lapsed back into the desert. He must assume the responsibility of having caused thousands of tons of cabbage and lettuce, hundreds of bales of cotton and incalculable quantities of alfalfa, corn, sugar cane, Egyptian wheat, potatoes, onions, beans, figs, oranges, lemons, grapes, walnuts and pecans to grow where nothing but an occasional coyote or armadillo grew before!

I am not sure, but I believe he is also directly responsible for the fact that William Jennings Bryan owns a quarter-section and a home in Mission, which is quite an achievement as well as a strong endorsement of the project—since the Great Commoner is also among the carefully "canny!"

Mr. Glasscock is an attorney—and an exceptionally able one—but he may well rest his claim to fame upon the cabbage and cotton, the corn and the cane.

—Whoever can cause these to increase and multiply upon a former desert has a more enduring claim upon the respect and gratitude of his fellow countrymen than he who wins a war or an anti-trust case!

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GUARANTEED
METAL
P. A. DOWD KNIFE WORKS

You Can Get Along Without it, But—

YOU'LL HAVE A FEELING THAT you are missing something.

The LUMBER INDUSTRY, statistics show, is the world's greatest industry. To keep yourself posted on all its happenings by word of mouth is unsatisfactory and incomplete.

There are thousands of men in every branch of the industry who realize that to profit most they must not only get ALL the lumber news, but ALL the lumber ideas and articles they can of a helpful nature. These same thousands realize, too, that they can get this valuable information, and the spirit it conveys, ONLY through the journal devoted to their trade. So to try to get it any other way is bound to leave a feeling that you have missed something.

In keeping with the industry it represents, the ST. LOUIS LUMBERMAN is a big, many paged journal that has between its covers every issue, articles, pictures, stories, reports, and a hundred and more things interesting and valuable to every member of the lumber industry.

Yet as valuable as it is to men who want to know MORE about the lumber business, and reap the returns that knowing more brings, one can get along and probably win success without the ST. LOUIS LUMBERMAN coming to him every two weeks, but he will always be troubled by that "missed something" feeling.

Send for a free sample copy to-day and note the character of the things you have been missing.

$2.00 will bring you the 24 issues for one year.

The LUMBERMAN
ST. LOUIS

LUMBERMEN'S BUILDING, ST. LOUIS, MO.

Hardware Supplies

Trident Decking Chain
Zenith Decking Chain
Missing Link Cold Shuts
Cant Hooks, Fid Hooks

Log Jammer Outfits
Simonds Saws
Special Saw Files
Saw Wedges and Hammers

Axes and Axe Handles
McLaren Sleigh Knees
Concave Sleigh Shoes
Logging and Tote Sleighs

Zenith Harness
Zenith Horse Collars
Horse and Camp Blankets
Camp Bunks
Springs, Mattresses, Pillows

Lumbermen's Hardware Supplies

For Making Camp
Cook Camp Outfit
Office Supplies

Warehouse Necessaries
For Bunk House
For Blacksmith Shop

For the Barn Boss
For Road Work
For Putting in the Logs

For Hauling
For Driving
For Sawing

Marshall-Wells Hdw. Company

PORTLAND
SPOKANE
DULUTH
WINNIPEG
EDMONTON

MODERN LOGGING IN MOTION PICTURES.

(*Continued from page 173*)

it will be taken to the mill by the main line locomotive.

Part Three.

Part Three opens with a view of the main-line locomotive taking a train of loaded log-cars in to the mill.

The second scene shows the logs being dumped in the storage pond behind the mill. The log-train is shown being backed along a switch bordering the log pond. The track being banked at a steep angle towards the pond, the logs roll off the cars, down the skidway and into the pond as soon as the toggle chains are released at the rear.

The next scene shows the "bull-chain" which is provided with sharp spikes at frequent intervals to catch the floating logs as they are pushed against it and carry them up into the mill. There they pass beneath the cut-off saw which is shown at work cutting the long logs into the proper size for the band and gang saws.

The next scene shows a modern band saw and log carriage at work sawing two-inch planks, after which various views of electric trucks handling the finished lumber are shown.

After showing the loading of a flat car with "four by fours" and a flash of a Santa Fe lumber train "en route to the ultimate consumer" the final part concludes with a panorama of mill and lumber storage yards in which were some twenty-three million feet of finished lumber at the time the picture was taken.

The pictures were shown at the Empress Theatre in Duluth for three days—matinees and nights—where the Clyde people gave all their employees a chance to see them.

After which they went to the Forest Products Expositions in Chicago and New York, being the movie "headliner" in both places.

After going to Elizabeth to be shown to the models who posed for 'em, they will probably embark for Europe to become a permanent part of the C. I. W. salesforce in deah old Lunnon.

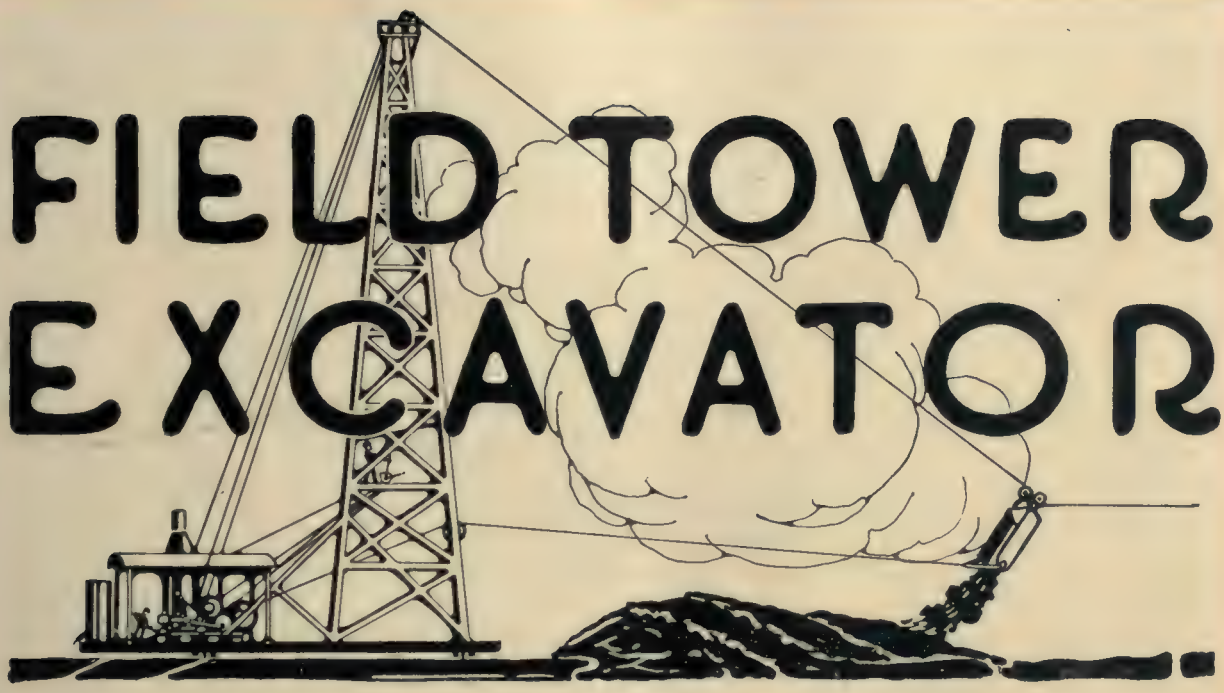
Other copies will be made, however, and kept handy for emergencies: so that you never can tell when you will run right into these pictures instead of some regular drammer.

The S. L. A. is sure going to get a chance to see them. We promise it that right now!

The End.

Homeopathic principles cannot be applied in the healing of a mind diseased: habits of evil thinking can be cured not by their like but only by their opposites.

FIELD TOWER EXCAVATOR



THIS machine is particularly adapted to the construction of levees and the digging of drainage and irrigation canals. It consists of three principal parts; tower, engine and bucket.

THE TOWER is a framed structure ranging in height from 50 to 100 feet according to the distance from which material is to be taken. It requires no guying and can be moved on its own wheels over the tracks furnished without a minute's delay.

THE ENGINE is double drum, double cylinder and is equipped with a 150 lb. pressure boiler. From the front drum, the drag-line runs thru a sheave (the height of which can be varied) direct to the bucket. From the rear drum, the gravity line leads over a sheave journalled on top of the tower, down thru twin-sheaves on the rear of the bucket and is secured by a slidable clamp to a 200 ft. anchor line laid at right angles to the tower the desired distance away. As the machine moves along its track, this clamp is slid down the anchor line so that the gravity line is always opposite.

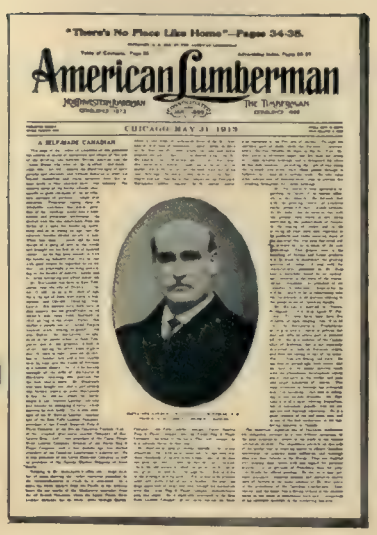
The digging angle of the bucket can be varied by manipulating the gravity line. When the load arrives at the machine it is dumped and the bucket is returned to the digging point by tightening up this line.

A complete illustrated description of this machine is contained in "Clyde Special Messenger No. 3" which will be sent promptly on request.

CLYDE IRON WORKS

Manufacturers of CLYDE-GRADE Hoisting Machinery

HOME OFFICE and FACTORY: DULUTH, MINN., U. S. A.



READ IT, because—

You get it *every week*.

It will keep you posted on markets, *every week*.

It will give you the news of the entire lumber world, *every week*.

It contains dependable and authoritative editorial comment and opinions on matters of interest to the lumber trade *every week*.

Its many departments and special articles provide a veritable compendium of instructive, informing and entertaining lumber miscellany, *every week*.

Its able staff of editors, reporters and correspondents, and its exceptional news gathering facilities enable it *every week* to present such a comprehensive and dependable review of all matters pertaining to the lumber trade as to have earned the title of "World's Greatest Lumber Paper".

ADVERTISE IN IT, because—

It reaches practically ALL the trade.

Its advertising pages are considered the leading directory or guide to "Where to Buy".

It will give you MORE circulation than any two other lumber papers combined.

It will give you BETTER circulation. The average credit rating of its subscribers exceeds $100,000 each.

You will get inquiries from firms who will make the most desirable customers, many of whom could not be reached through other media.

Its thousands of readers BUY it and pay $4.00 a year for it IN ADVANCE, thus guaranteeing a bona fide circulation among people who want the best and have the means to pay for it.

Ask for sample copy and further particulars.

American Lumberman

World's Greatest Lumber Paper

CHICAGO

¶ Injectors kick about the temperature of the water when it is not low enough to condense all the steam used; want a heat balance to keep their workatite up.

¶ When you raw-hide your wife's hat she secretly don't believe you or she'd shoot the hat.

¶ A big suction pipe maketh glad the heart of the pump, (can't be too big) but the little crooked choker frazeleth the whole job.

¶ Often the boss won't buy something we want because we can't tell the why in the right language; let's pave the road from presentation to profits, and see if he'll listen.

¶ Feels fine to be satisfied but it queers advancement; keep ripping old notions open for examination.

¶ The human boiler needs nutritious fuel and judicious irrigation; nightmare liquids don't make steam, for example.

¶ The proper interest in our work makes us forget what it pays or whether it pays at all; incidentally, all such work does pay for in addition to the financial allowance there is a harvest of satisfaction and a training for further conquests.

¶ "Despise not the day of small things;" many a four thousand plunk stink wagon, and sky scraping skidders have had to patiently wait for the "high ball" on the pleasure of a six inch monkey wrench.

¶ The biggest job in the world is that which was best done.

¶ The smallest is that which gets balled-up by a human shrimp with a big "rep."

¶ The best job is that which benefits the most people.

¶ The worst is that where the doer hogs the whole business.

¶ The best bargain is where the seller makes some profit and the buyer makes more.

Are You Interested In the Forests?

¶ Are you a lumberman, a logger, a manufacturer, or an owner of timberlands?

¶ Do you want to know all there is to be known about the forests, their use, their value, their protection?

¶ Do you want to read articles by experts on every phase of forest conditions affecting your business?

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AMERICAN FORESTRY

The only Magazine of its kind in the United States

$2.00 a Year

AMERICAN FORESTRY
Washington, D. C.

FORT PITT SPRING AND MANUFACTURING CO.
PITTSBURGH, PA.
COIL AND ELLIPTIC SPRINGS
VANADIUM
STEEL
SPRINGS

A postal or letter giving your address will bring you specification blanks which will be of use in sending inquiries for springs.

Locomotive Gears

OF "STAG" Manganese Steel will average at least six times the life of ordinary steel. They are tough and strong and stubbornly resist wear.

Are guaranteed to be economical.

If you have dimensions of your gears write us. If not buy through the locomotive manufacturer and specify our steel.

Edgar Allen American Manganese Steel Co.

Chicago, Ill. Chicago Heights, Ill.
New Castle, Dela.

A 75 per cent Saving in Lubrication

SHAFTENE

Save money, time, machinery and labor. Sent on 30 days trial, no charge for amount used if SHAFTENE fails to solve your lubricating problems. Ask for list of satisfied users. Manufactured and sold ONLY by

THE TROPICAL OIL CO.
CLEVELAND, OHIO

¶ The worst bargain is where the buyer gets skunked and the seller goes on a tear with the swag.

¶ The best machinery in the world, (aw what's that imported Scotch name?) well, that which lets the careless engineer down the easiest.

¶ The worst machinery in the world; nixy my boy, here's where I head in; our grand children will laugh at the *best* we know.

¶ Let's alight from this hilarious perch and get ferninst brass tacks. Jever notice those two songs of steam?, One in the steam pipe, the operatic air of "Get the Goods;" that's music; the other, that darned gander hiss it makes when it's losing its grip, that's noise.

¶ Take no chances on safety valves that don't report; make'm pop; remember the pitcher that went once too often to the well, also poor old Samson who visited Delilah's barbershop once too many and lost his goat-ee.

¶ The steam trap is an animal made to separate water from the steam and get it out of the piping. It was so named to prevent the water, which is the real trapee, from getting onto the game before it gets caught.

¶ The engineer who is not stimulated by a few polished places about his machine has missed his vocation.

¶ Two beautiful things don't have to look anything alike; depends on the service they are in; beauty itself is service; stimulates.

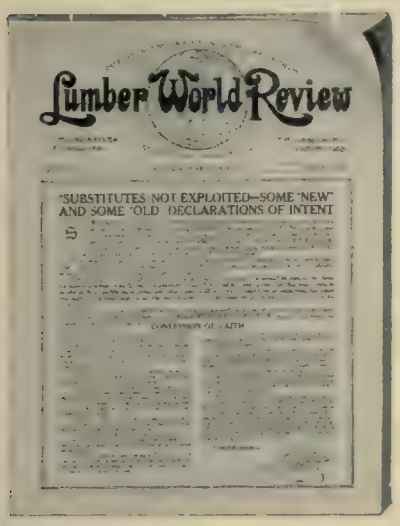
¶ Don't expect clean steam, engine efficiency and minimum inside wear from muddy feed water; some boilers ought to kick harder and oftener.

¶ The carbon copy saves many a "think I did."

NEW CHARTER OF THE INDUSTRIAL LUMBER CO.

The Industrial Lumber Company, with principal establishment at Elizabeth, La., has filed its charter at the Allen Parish courthouse. The capital stock is $2,200,000, divided into 22,000 shares of the par value of $100 each. The new corporation takes over the business of the Industrial Lumber Company of Beaumont, Tex., and has among its stockholders the following: Newton R. Wilson, Sam Park, Edward A. Wilson, Miss Maud Brough, Joe M. Park, Chas. K. Seymour, Mrs. Emily Brough. The officers of the company, as shown by the charter of the new corporation are: Newton R. Wilson, president; R. M. Hallowell, vice-president; Edward A. Wilson, second vice-president; Joseph Muth, treasurer; F. W. Liskow, secretary; Irvine A. Fridge, assistant secretary and assistant treasurer. The above officers and the following are directors; Irvine A. Fridge, first alternate; Edward F. Krauss, second alternate; F. M. Lee, third alternate.

"Experience With A Cable Tram Road"



WOULD you like to know the experience some men have had with a cable tram road?

It is always interesting to know how the "other fellow" does things. Even if we don't always agree with him we get some idea that may mean many dollars to us.

In our December 10, 1913, issue we published a practical discussion of one man's experience with a cable tram road.

The LUMBER WORLD REVIEW publishes practical ideas, plans, etc. in every issue. The methods used by the *other fellow* to make his success are full of ideas for YOU.

Read the LUMBER WORLD REVIEW and get the "other fellow's" viewpoint.

A postal card request will bring a sample copy to you FREE by return mail. Send for YOUR COPY TODAY.

LUMBER WORLD REVIEW

SUITE 1740 TRANSPORTATION BUILDING

CHICAGO, ILL.

THE selling-power of your Advertisement can never be greater than its *pulling power!*—Because people have got to *read* it before they can want what you advertise and they won't read it unless it *commands* their attention. How can you command attention to your ad?—Remember that *nothing pulls like a picture. Put a "cut" in your copy instead of in your price.* It costs less, produces more!—Let us picture your product so that your prospects may see for themselves! . . . . . .

Duluth Photo-Engraving Company

ARTISTS ENGRAVERS
COMMERCIAL PHOTOGRAPHERS ELECTROTYPERS

Duluth, Minnesota

ADVERTISING IDEAS

are harder to get than just good printing—and, after all, it's THE IDEA that captures the reader's attention and excites his interest in what you have to sell.

You may judge from this copy of "Steam Machinery" that the M. I. Stewart Company does fairly good printing, but

STEWART SERVICE

is the really BIG end of our business from your standpoint.

WE SPECIALIZE IN ADVERTISING SERVICE FOR MANUFACTURING LUMBERMEN and are prepared to help you plan your entire printed campaign if you will let us.

We want to do your printing ourselves, but more than that, we want the printing we do for you to be PRODUCTIVE, so that you will come back for more.

M. I. STEWART COMPANY

A RELIABLE SOURCE OF
SALESMANSHIP IN PRINT

DULUTH:—"Great Port of the
Northwest."

Vol. 2. No. 7.

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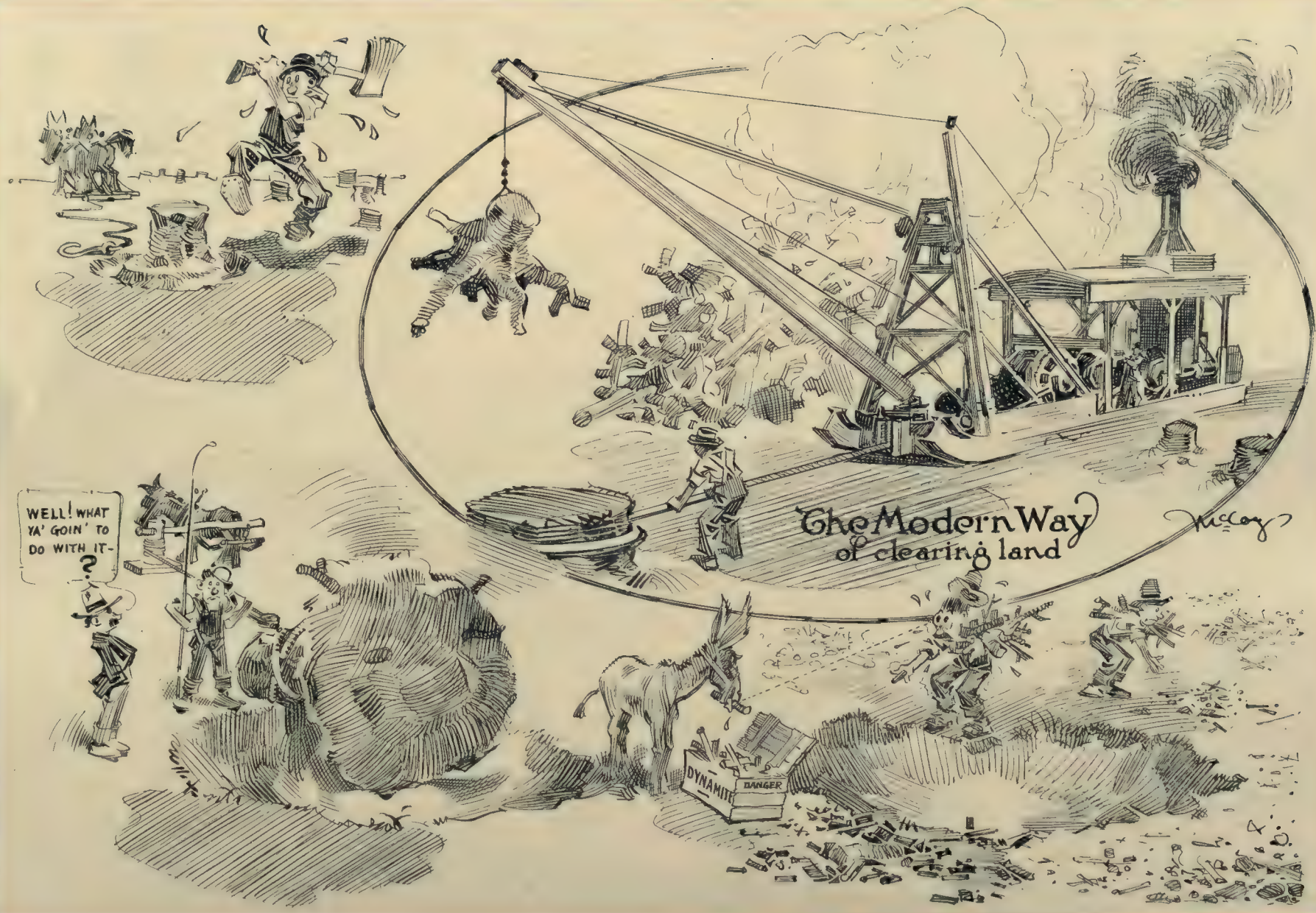
A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

FOR THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER


The Modern Way
of clearing land
WELL! WHAT YA' GOIN' TO DO WITH IT-
?
DYNAMITE
DANGER

A Monthly Magazine of Men, Machinery & Methods

Charles H. Mackintosh Managing Editor

Our Covenant with Our Readers

We absolutely and unconditionally guarantee never to publish in our columns advertising matter of a fraudulent or misleading nature, nor to accept copy from any firm whatsoever until we are satisfied beyond all possibility of reasonable doubt that such firm is in a position to live up to the letter of its proposals and has done so consistently in the past. This we do, not because we are better or more moral than other magazines of our day, but because we conceive the true purpose of a magazine to be service to its readers, and we would serve well in order that we may be well served.

STEAM MACHINERY PUBLISHING COMPANY

SUBSCRIPTION RATES:

One Dollar a year to any part of the United States. One Dollar and Fifty Cents to Canada and foreign countries.

ADVERTISING RATES:

Rates for advertising in the columns of STEAM MACHINERY, together with a detailed description of the *quality* and *quantity* of circulation. will be sent promptly upon request.

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COMMENCING WITH THIS ISSUE

Steam Machinery amputates all its sidelines and becomes exclusively *A Magazine for Manufacturing Lumbermen.* ¶ Henceforth we devote ourselves entirely to the interests of that class. ¶ Commencing with the first of the coming year we will change our name to accord with our new policy, but until that time we have decided to drag along with our old covers and cognomen. ¶ After all, the *name* doesn't matter much, nor do the covers:—it's the *meat* sandwiched in between that will make you want to set your thot-teeth into it. ¶—And our mental meat-men are going to work overtime all the rest of this year, carving the best and juiciest cuts out of the cosmos for you!

The Publishers.

The Editor Thinks

THE mind of a man is only a bundle of Habits, formed partly from choice but mostly thru the urge of environment. ¶ Habits are formed thru constant repetition of anything which can find expression in and thru and of the five senses. ¶ The brain of a newly-born baby is builded of these repetitions so obviously that one may watch it in the building. ¶ But no less is the mind of a mature adult continually being added to or taken from in the self-same way. ¶ Habits are of two kinds, negative and positive: while each of these may be arbitrarily divided into the two categories, good and evil.—Arbitrarily, because what may be good under one system of society would become bad under another. ¶ Negative habits are those of *not-doing* things. Thus we acquire the habits of not getting up in good season, of putting things off, of not deciding yet, of not taking exercise, of forgetting our friends and their claims upon us, of not taking time to think and to read, to laugh and to expand. ¶ Good negative habits are found in those who have trained themselves not to lie and not to steal, not to cheat and not to indulge themselves in their vices: who have, in short, built up habits of not yielding to their powerful primitive passions. ¶ Our positive habits, both good and evil, are of uncountable numbers. We start with acquiring the habits of eating and breathing, walking and talking, thinking and writing, working and loving ourselves and our fellows. Also we acquire some of the evil habits; hating and cheating, boasting or lying, the use of narcotics and intoxicants and a thousand others. ¶ Usually we *drift* into our habits whether positive or negative, good or evil. We do things or not-do them because it seems the easier way. ¶ But we *can* build our own habits if we want to and we can replace those which have been formed by chance and found evil. This last is the only way to unbuild a bad habit—to replace it with its opposite. No habit can be uprooted suddenly and cast out of the mind like a weed from a garden; it took time and constant repetition to form it and it will take time and constant repetition to replace it with its negative or with a better positive habit. ¶ The only way to learn to do a thing is to *do* it—and then keep on doing it. For there needs no allegory to describe the brain as a bundle of habits. ¶ If you could lift the top of your skull and look down into your own mind you would see those habits as a physical fact. Every time you think a new thot a tiny grey dot pushes up into the cortex of your cerebrum or upper brain, trailing behind it an insulated nerve wire connecting it with your nervous centers of thot and action. ¶ Every time you re-think that thot you make it stronger and imperceptibly larger; increasing also the conductivity along the nerve-wire which connects it up with your ego. ¶ If you never re-think it, nerve cell and nerve wire will atrophy, fading back into nothingness just as will an unused muscle. ¶ But when once you have builded it so strongly that it has become permanently hitched-up with your association centers you *cannot* forget to re-think it. ¶ Any stray thot may,

thru association, revive it in your memory and prompt the action implied by it. ¶ You must consciously *replace* it if you would be rid of it, refusing to think it consciously while you are building its direct opposite until it is stronger than the original and its nerve-wire sufficiently conductive to take the current of association in its stead. ¶ Thus are all habits of good and evil action formed, since all action originates in thot and all thot originates in one or other of these habit-cells among your cerebrum. ¶ Until you have formed the thot-cell you are incapable of the thot. ¶ Even when the cell is formed, you must increase the conductivity of its connecting nerve-wire by the constant passage of that same thot over it until it becomes automatic. ¶ Such is the case in walking and in moving the lips in talking, or in the thots prompting the actions of a skilful typewriter, telegraph-operator or mechanic. ¶ I have had people ask me "How can I become a writer?" and have peeved them by replying "By writing and writing and—keeping on writing." But, of course, it is true. ¶ The only way to do a thing well is to do it over and over and over again, because habits are not made in a minute and all thots and actions, all arts and crafts, are founded upon habit; while facility is acquired only with constant repetition.

△ ⊢ ♂

THESE BE THE DAYS of great unquiet when men turn vaguely from side to side seeking a new prophet and a new gospel. ¶ What a wonderful and irresistable thing is this Law of supply and demand! ¶ Behold the Blavatskies, the Besants, the Corellies, the Mary Baker G. Eddies, the Hubbards, the Mardens, the Macfaddens, the Bellamies, the Gerald Stanley Lees, and all the limitless legion of Torch-Bearers who have arisen during this generation! ¶ Prophet after prophet gathers his (or her, for these are days of Equal Rights in Inspiration) coterie of followers, little or great, and goes clamoring down the months, soliciting business. ¶ But we, who are the Voice of God, the great multitude of rational middle-classed, who are neither inspired nor ignorant, who act as the governor on the engine of civilization; we will not have any of them. ¶ And yet we do not reject them. ¶ We take from each his little grain of Truth, separated as radium from its ton of pitchblende, and make of them all a mosaic stairway whereon to tread a little higher. ¶ In the multiplicity of prophets there is progress. ¶ No single prophet can redeem the world now. ¶ So many of us have claimed our share of universal knowledge that there is no longer a chance for a Buddha, a Confucius, A Pythagoras, a Lao Tyze, or a Saku Muni. ¶ The level of Intelligence has flooded too high for any startling peak to tower above it. ¶ Now we must rely upon lesser peaks, peaks which rise as far from the primeval base perhaps, but only the heads of which are perceptible among the crowds.

△ ⊢ ♂

WHENEVER YOU FEEL LIKE cursing your luck because nobody ever left you an "independent fortune," change your mind and give thanks instead! ¶ Accumulated money is O. K. as the evidence of energy, but if it wasn't *your* energy the money is just so much mud. ¶ Heaven help the boy who doesn't have to work for a living!—but Heaven won't. ¶ That particularly is not Heaven's job, which is to entice other Hustlers to get busy and regain their share of the accumulated gold held as in a vacuum by said boy-who-doesn't-have-to-work. ¶ Not that

Heaven has any particular animus against said boy. ¶ On the contrary she needs him and recognizes his value as a solvent for surplus energy. ¶ He works into the Schedule of Things as a restorer of balance, a redistributor of weight. ¶ But, having done this and even while doing it, he is in the very nature of things a nonentity—a minus zero. ¶ Because a Man is made up of all the things that come to him in the course of life, not of the things that get away. ¶ And nothing comes to the boy-who-doesn't-have-to-work: all that ever happens to him is that things get away from him gradually until there is nothing left—not even the boy-who-didn't-have-to-work. ¶ Even the things that got away from him were not his own—they were the fixt energy of his too-energetic daddy who didn't need them any more. ¶ So, starting with nothing, the boy-who-doesn't-have-to-work loses even that which he had: making him a well-defined minus zero and clearly proving our contention. ¶ Which is that the mutt who covets things he hasn't got the gumption to get is asking Fate to lead him into the Lethal Chamber.

♃ ⊢ ♂

WHY MUST MEN CRY FOR Justice so often and so loudly?—Justice is the last thing they want; yet they cannot avoid it. ¶ The whole Universe is crawling with Justice; by no possible means can we evade it. ¶ We breathe it and drink it, eat it and think it. ¶ It comes with us into the world and it follows us out into the beyond-life. ¶ We are enwrapped about with it through every waking and sleeping moment of our breathlong lives, until it is no exaggeration to write that it is a part of our very selves. ¶ Justice is a universal Law, as uncontrovertible as that of Gravitation. ¶ It is better known perhaps as the Law of Compensation, under the ban of which lie all things animate and inanimate. ¶ "As a man sows, so shall he reap."—There you have the Law crystallized into a sentence insofar as it bears upon our kind. ¶ And, down among the deep recesses of his inner Mind, every man *knows* at certain moments that nothing has ever happened to him that was not deserved or compensated for in some way. ¶ They do not want Justice, but Mercy, these seekers after special privilege, and Mercy is not in Nature save it be found in Man. ¶ Nature dares not be merciful. ¶ She must maintain the checks and balances whereby she has her existence. ¶ To vary from the Law of Absolute Justice would be unnatural, and is therefore impossible to her. ¶ But Man can be merciful, if he assumes the risks attendant upon disobeying one of the great Laws, for Man is a free agent. ¶ Let him beware, however, who tampers with the scheme of things. ¶ He may be very sure that when he is most merciful he is most just—or most mistaken. ¶ Therein you have the key to the matter. ¶ —Men are so seldom Just to one another that when they are, they find themselves almost incredibly merciful. ¶ Their Justice is merciless, their Mercy is Justice. ¶ Until they learn to know what Justice is; until they learn that every man must pay his own debt, one way or other; they will not cease from tampering with the wheel of things, crushing their fingers beneath it, as likely as not. ¶ No man can mete out Justice for another, since justice is a part of every man and works as certainly as his heart-beats. ¶—So, pray for Justice if you want to, but be very certain that your prayer will be granted even though you pray to Man, for nature will compensate you for his injustice!

"A MILLION & A HALF AHEAD OF THE MILL"

Short Leaf Pine operation piles up surplus at the rate of Half a million feet of logs a month after installing One Four-Line Rehaul Skidder

The Description thereof done into Pictures and Print for "STEAM MACHINERY"
by S. MacHinery

Ask the average yellow-pine mill superintendent to give you the ear-mark of a successful logger and he will tell you to find the fellow who always has lots of logs ahead of the mill.

"Only three logs in the pond, boys, and the log-train just blew for the three-mile crossing!"—takes about a minute for every man in the mill to get *that* and then the entire organization begins to slack, slack, slacken down, which is bad for dividends and worse for discipline!

Fate Fitts might have been able to tell you something about the evil effects of the condition portrayed in our preceeding paragraph if you had tackled him some time prior to December first nineteen thirteen—but not now!

Because Fate Fitts is mill superintendent for the Attoyac River Lumber Company at Mayotown, Texas, where they have that million and a half ahead of the mill we told you about in our heading up above.

You see it's this way:—

'Gene Carter is general manager of the Attoyac River Company's operations at Mayotown and 'Gene Carter is still a young man.

Being young—and a Carter—he carries more pounds pressure to the square inch than most people, which keeps the wheels a-turning in Mayotown at a ripsnorting rate!

Now you take a general manager like that and imagine him jumping up from his cost-sheets in the office because he can't hear any more "rzzzzzz-blamm!" over at the mill, and you might as well go right ahead and imagine something happening.

Because it will.

And, in Carter's case, it did!

A few days before the Mayotown mill ran out of logs for the last time, an interested observer might have taken a kodak-picture of many bull-teams passing slowly out of Mayotown into Oblivion, which last is not on any railroad.

At the same time, said interested observer could have added to his collection the snap-shot of a four-line Clyde rehaul skidder getting out onto the job.

After which; peace, and plenty of logs for Fate Fitts and his fellows!

J. H. Ellisan is foreman of woods, and now you couldn't find a jury to convict him even of insecticide after any rash mortal had tried—and failed—to rob him of that rehauled four-line Clyde!

—Tell you what!—Let's get General Manager Carter to take us out in the woods in his motor-car whilst we give them the "once over" out there!

* * *

Twelve miles of main line connect Mayotown with the woods operation. One section boss and six men keep this in such splendid shape that we didn't even jump the track once on our way out.

Sixty pound steel and genuine white oak ties (worth from forty to forty-five cents apiece on the open market!) make this a pretty valuable piece of track.

True, they cut these ties from their own timber, thus reducing the cost to twenty-eight cents per each laid down; but even with this information, S. MacHinery had difficulty in restraining the kleptomaniac tendencies of his assistant secretary who accompanied him on the trip!

Running out of main line, we found four miles of spur track awaiting us, of which a mile and three quarters was in timber.

These spurs cost about $240.00 a mile to lay, allowing $20.00 for blowing stumps out of the right-of-way. They keep one man just to handle the dynamite, while a foreman, two men, team and scraper do the grading and ditching.

It takes a week to lay a mile of track and the same time to pick it up again, the total cost for the double operation being in the neighborhood of $420 per mile. The general track laying scheme is laid out a year in advance: not inflexibly, of course, but in such a manner as to greatly facilitate the actual operation when the time arrives. —They figure to have always a mile of spur-track laid ahead thru timber.

Talking about timber, it's a good stunt to be down around Mayotown where they have some *worth* talking about.—A hundred sixty million feet of the finest shortleaf in the Lone Star State, fairly evenly distributed at the rate of about ten thousand to the acre over a young kingdom

equal in size to a quadrangle twenty-five miles long, ten miles wide, ten feet below the surface and a hundred fifty up in the air makes *some* property, if any person should happen to stop you and ask about it!

They handle this from woods to track with one four-line Clyde skidder equipped with mechanical rehauls and decking lines for each skidding line.

They use three lines right along, holding the other in reserve; go back an average eight hundred feet with a maximum distance of thirteen hundred, and get an average of from twenty to twenty-five thousand feet (log scale) a day to the line. On this there is a 20% overrun at the mill, which cut an average 66,750 ft. a day during January and will hold around that figure right along.

Skidding lines are 5-16" Hercules, rehauls 9-16", spotting line 5-16". They use 3-4" chains as tag lines to the tongs and haven't had any trouble with them so far.

It sometimes happens that a tag-chain will stretch, becoming about as flexible as a steel bar, but here they have been using them right along since December first nineteen thirteen without running into that trouble.

—Anti-tag-chainers may "live in hopes", however, because that was only *three months* up to the date of our descent upon them.

Chas. Runels was skidder foreman at the time of our visit. He employed nineteen men about the machine with one extra man to set lines out ahead. In this work the only four-footed creature on the job—"Jim," a mule of super-human intelligence—acts as the motive power.

Rehaul lines are taken out as far ahead of the machine as cable will allow and brot back thru three snatch-blocks to the skidding cable.

Thus in making a move ahead, all that is necessary is to change the blocks on the end of the direct-pulls, moving them forward the same distance as the machine. This method is known as the "trip set," and is illustrated on page 201 for the benefit of those unfamilar with it. It requires some extra cable, but cable is cheaper than the time of nineteen men and a machine!

This skidder has been consuming four cords of wood a day, fuel being furnished on contract at $1.75 a cord.

The cost of skidding for the first two months was a dollar a thousand.

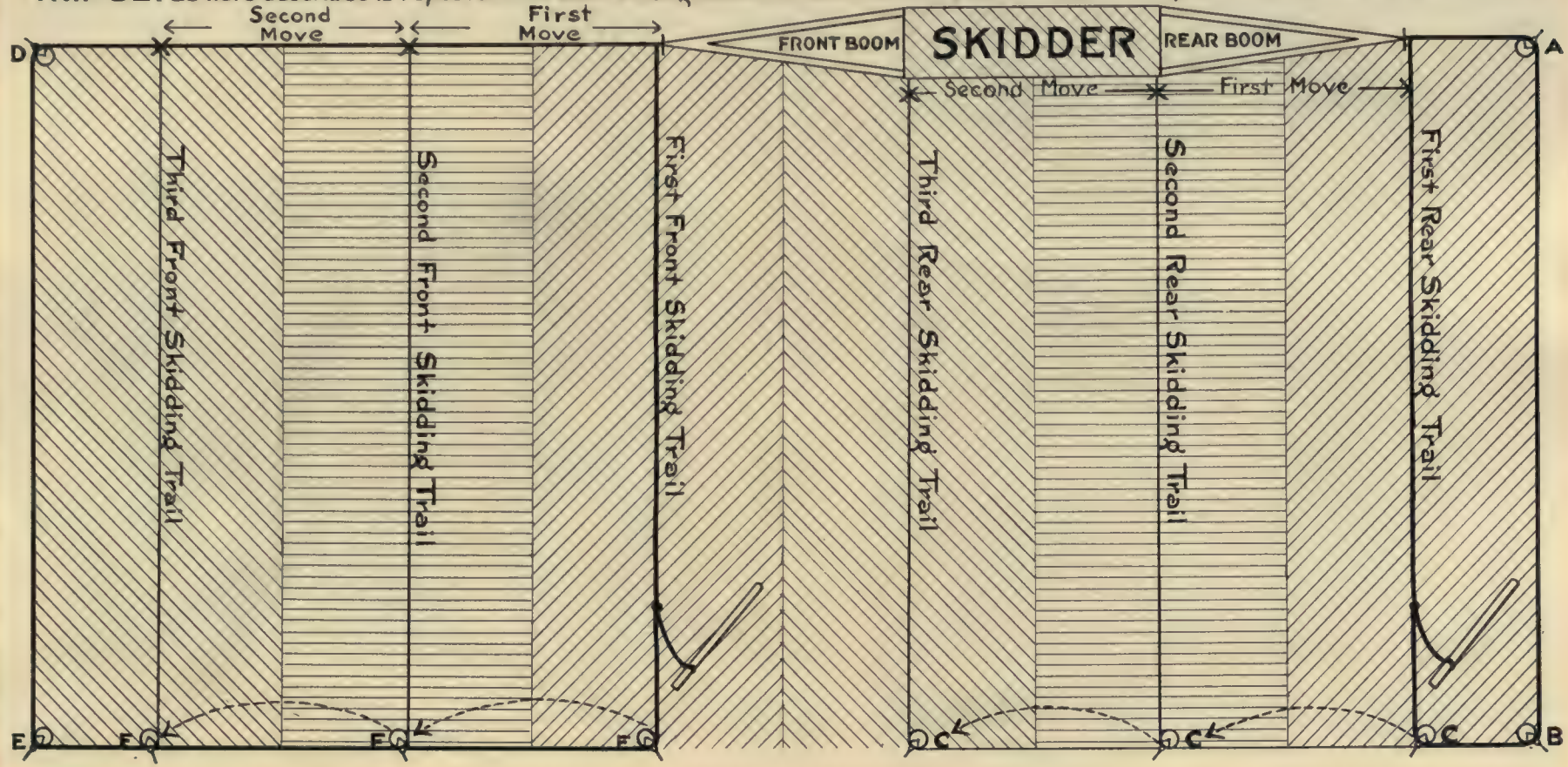
February costs were not all in, but the indications pointed to a twenty per cent reduction due to growing familiarity with machine and methods.

The country is exceedingly rough, becoming almost mountainous in places, and is bisected by many arroyas, all of which add to the difficulties to be overcome.

The total cost of logging averages around five dollars, in which however the expense of thoroughly overhauling the main line,

Diagram of TRIP-SET with Clyde Four-Line Rehaul Skidder

▨ = Land Logged from First Position ▤ = Land Logged from position after first move. ▨ = Land Logged from Last Position after second move. HEAVY LINES show first position of rehaul and skidding lines. After ▨ is logged, snatch-blocks C and F are moved (to the left in this diagram) while at the same time the skidder also moves the same distance in the same direction. ▤ is now logged, after which the moving operation is repeated as described and ▨ is logged. A full move is then made and the entire TRIP-SET as here described is repeated. We show arrangement of lines on one side of machine only. It is the same on both sides.



The Lay o' the Land.

putting in eighteen thousand new white-oak ties, is included.

It is interesting to compare the feed-bill since the installation of the skidder with what it used to be before.

Giving the Woods the Once-Over.

In January 1914 it totaled $30.00.

Before December 1913 it used to average $1300.00 a month right along!

The railroad equipment comprises forty log cars, a fifty-ton road locomotive and two geared locomotives of fifty and sixty tons respectively.

They run three log trains of ten cars a day, always holding ten cars and a locomotive in reserve, so that two locomotives could commit suicide without tying up the mill!

A throughly up-to-date roundhouse, into which all locomotives are run every night, is a feature of the operation.

They used to have considerable trouble with the water they are compelled to use in their locomotive boilers and the announcement that they have found a *real* cure for this trouble will probably interest a great many of our readers.

The cure in question is called "Perolin" and is made by the Franklin Oil & Gas Company of Bedford, Ohio.—General Man-

Attoyac's Four-Line Rehaul Clyde.

ager Carter recommends it to us as the clear stuff!

The log-pond at the mill has capacity for a million feet of logs—or rather *had* before they went and put 'em in—in addition to which there are always a few hundred thousand feet beside the spurs out in the woods —*five* hundred thousand at the present writing!

The mill is equipped with one band and one gang saw; the planing mill with two fast-feed machines having each a capacity of two hundred feet a minute. They have also a double-geared sizer, giving them a capacity of 150 cars a month and making them independent of rain and car-shortages.

The entire operation, from standing stick to sales-department, is so arranged that nothing short of total destruction of the mill could stop them delivering the goods:—and even then they'd probably be able to keep things going with stock on hand and their other mills until they had it rebuilt!

J. P. Carter, of Houston, is president of the company, H. M. Carter, vice-president, Y. M. McNeil, auditor and V. M. Lacy secretary.

To H. E. Carter, general manager, we have already introduced you thru his woods and mill.

The End

Water Wagon Attachment.

Famous Loggers
in Picture & Pome

Done under Protest for STEAM MACHINERY by

THE LOGGER'S NIGHTMARE

Jim was a logger, old and gray,
  Who owned ten teams each of eight bulls
  Which daily made their twenty pulls
In logs a thousand feet away.

They made two hundred pulls in all
  Each pull containing three good logs—
  Joined each to each with wrot steel dogs—
Six hundred logs with large and small!

Says Jim: "I guess that aint so slack!—
  Leastways, I shorely gotta hunch
  To back my bulls agin the bunch
From here to Helena and back!"

—Ah, never yet did mortal man
  Indulge in boastings vain and loud
  But grim Nemesis, on a cloud,
Sat waiting with the Cosmic Can!

(*Continued on Page 221*)

FORESTS MADE TO ORDER

Written for "STEAM MACHINERY" by JAMES A. BYRNE

PERHAPS no agitation of the Roosevelt administration has had more lasting effects than that for timber conservation. In all parts of the country one can see undertakings looking to the best methods of using wisely the existing forests and the putting in operation of comprehensive schemes for upbuilding new woodlands.

Uncle Sam has taken the initiative. More rigid provisions have been enforced for the regulation of the great tracts of public domain. The fire laws are more thorough and more strictly enforced. Grazing arrangements are better defined. Domestic cuttings are more carefully scrutinized. And in general the scope and effectiveness of the work of the rangers are increased. In the Appalachian highland great watersheds have been obtained for government control with a view to husbanding the wooded area and thus insuring permanence to the valuable water-power and municipal uses of the rivers rising in it. A third phase of government activity appertains to wood-treating, wood chemistry, timber tests, and pulp investigations. And a fourth embraces the trying out of foreign trees in our country and the distribution of important domestic species to regions now destitute of them.

Private interests have not been slow to see the wisdom of undertaking this work. I have before me accounts from forty companies, whose areas involved in conservation of existing or promotion of new forest vary in in size from a few acres to 70,000 acres. Among them are railroad, coal-mining, match, paper, and lumber companies.

Grove of European Larch twenty-seven years old, Dundee, Illinois.

PERMANENCE OF THE WORK.

Perhaps the most startling feature of the accounts is the permanent nature of the plans and provisions. The Carbondale Coal Co. of Ohio has entered on a scheme whereby from 50 to 100 acres are planted each year to poplar, locust, chestnut, walnut, and catalpa until a tract of about 2,000 acres is covered. The Delaware & Hudson R. R. Company has already planted about 2,000 acres out of a reserved area of 40,000 acres. The United States Coal & Oil Company of Cleveland has 30,000 acres of standing timber, each district of which it plans to log every twenty years. The B. & A. Fessenden Co. of Townsend, Mass. has covered 225 acres of old pasture land with white pine set out 5 feet apart each way. This is intended for stair heading stock on a 50-60 year rotation. Many other examples of this phase of the subject could be cited.

CHANGES IN PLANS.

Every concern has its working plan. Many of these are modeled after that suggested by the

Forest officer planting western yellow pine seed by the seed-spot method, on a Colorado National Forest. In planting by this method the space between spots is usually 6 by 6 feet, and 6 to 12 seeds are put in each spot.

national government some years ago. The experience of countries old in forestry work, such as Germany and India, has been of great value in formulating these plans.

In some cases experience has already proven the need of changes in plans. The most conspicuous and discouraging example of this is given by the Pennsylvania Railroad Co. It started active forestry in 1902 in Pennsylvania by setting out 13,600 black locusts. That species was chosen because it was the "generally distributed tree native to that region." Thereafter for several years the black locust was planted until 2,000,000 of the saplings had been set out. Three pests—the locust borer, the twig borer, and the leaf miner—began to play havoc with the trees. In 1907 when the woodlands of the company were placed in charge of a regular forester the planting of this species was discontinued. "The pests," he says, "not only retarded growth in the trees, but have weakened them to such an extent that a large percent is either broken or dead." Since 1907 this company has planted 2,500,000 red oaks and 500,000 of the Scotch pine. Approximately 40% of these are trees that have been planted under the black locust as it succumbed to insect ravages. The total acreage planted is about 3,000.

The Keystone Coal & Coke Co. of Greensburg, Pa. set out 10 acres of catalpa in 1906 and later on 6 acres of locust. A great many of the catalpa trees died and some were ruined by field mice. In 1911 the locusts were twice as large as the catalpa and "were doing fairly well, though attacked by borers."

Another record of disappointment with the catalpa is given by the Illinois Central R. R. Co. The trouble was caused by attacks of an insect called the catalpa sphinx, and by inadaptability of the soil. The writer of this article knows of a small grove of the common catalpa in an Illinois village. It was planted to serve as a park and is now about fifteen years old. The trees are stunted, twisted, and generally a failure. The soil in that location is very sandy with a cold clay subsoil. No attention was paid to the trees after they were set out. It appears like a case of inadaptability.

Scotch pine, which up to 1913 comprised the bulk of the plantings done by the Delaware & Hudson Co., is giving place to red oak and Norway poplar, though why the superintendent of woodlands for that company does not divulge. The adaptability of red oak to the soil and climate of many parts of our country is well known, but the use of the Norway poplar is so far chiefly experimental. Over 80,000 of these trees were started by the D. & H. Company in 1913 and are doing well.

Forest officer sowing yellow pine seed with cyclone seeder, Montezuma National Forest, Colo.

CONDUCT OF EXISTING WOODLOTS

Most of the private timber lands that have been placed under the control of caretaking forces are situated in Maine, New York, Pennsylvania, Virginia, and California. A majority of these are owned or controlled by large mining, paper, or match concerns whose plants are located within available distance of the timber. Spruce and white pine are the prevailing species that have determined the areas to be tended.

In most cases where the area is large a forester is in charge. Some companies have entrusted the care of the woodlands to the farm superintendent. Many coal companies have this practice. Some areas in which grazing is conducted have no special overseers to look after the trees, the herdsmen being required to extinguish fires. Game keepers patrol the 4,000 acre tract of the Cleveland Cliffs Iron Co.

The E. I. Burton Lumber Co. of Philadelphia had so many adversities in its attempts to prevent fires that the fire protection policy was abandoned. Nearly all the other big companies take special precaution against and provide special means for combatting them. To prevent fires extraordinary devices are installed. The timber is thinned, fire lanes are constructed, telephone lines established and signal stations erected. The Witherbee, Sherman Co. of New York, which owns 10,000 acres, keeps its brush piled up and the trails clear.

Transplant beds such as the one here shown receive the little trees after they have grown in the seedling beds for a year or more.

Fires are caused by various means. In the last annual report of the National Forester the following table on the causes of fires is found.

CAUSES OF FIRES

Lightning	27.35%
Railroad locomotives	18.65%
Campers	12.91%
Incendiary	8.01%
Brush burning	5.00%
Sawmills and donkey engines	2.23%
Unknown	20.43%
Miscellaneous	5.42%
	100.00%

The government has agreements with many of the Western railroads whereby the latter cooperate in the work of fire-fighting. They bear part of the expense of patrolling, send their section men to extinguish fires along the rights-of-way, use spark-arresters in their locomotives and print fire warnings in their time-tables and other literature. Partly as a result of all these and other precautionary measures and partly because of favorable weather conditions, the fire losses in the National Forests for the past year were the lowest on record. Canada also made a record in this connection. In the last fifty years fire has destroyed fifty per cent of the original stand of timber in the area so far examined by the Dominion foresters.

An important feature of the

Boles of red and white pine in windbreak, showing perfect clearing and good form resulting from close planting, Clermont, Fayette Co., Iowa.

Planting eucalyptus near Tampa, Florida, to determine the commercial possibility of Australian trees on sandy pine land.

forester's work is the filling in of blank spaces. The Ayershire Coal Co. of Indiana has planted locusts in the open spaces of its 100 acre tract. Other companies have put in white pine, Norway spruce, and chestnut. There are 5,000,000 acres of denuded lands within the boundaries of the National Forests. The importance of reforesting these areas is increased by the need of keeping the watersheds in permanent control of the water supply for municipalities, power plants, and irrigation projects. During the past fiscal year there was collected or purchased by the Forest Service 41,114 pounds of conifer seeds and 337 pounds of hardwood seeds. A total of 29,446 acres was reforested by the National Forest Service during the year. Douglas fir, white, yellow, and lodgepole pine were the chief species planted on these areas.

CONDUCT OF NEW PLANTATIONS

The Pennsylvania Railroad Co. and the Delaware & Hudson Co. have taken the lead among private concerns in the extent of tree plantings. The former has set out 5,000,000 trees on an area of 3,000 acres; the latter over 2,000,000 trees on 2,000 acres. Approximately 40 per cent of the former's plantings are red oak and Scotch pine, the remainder chiefly black locust. In 1909 over one million trees were planted. Since then the annual production has been decreasing. The Delaware & Hudson Company is getting away from Scotch pine. They have had no chance to test the black locust, as their only plantings of this species were 5,000 trees in 1913.

The Santa Clara Lumber Co. of Tupper Lake, N. Y. has set out about half a million trees of the Scotch pine and Norway spruce varieties. The plants were raised in the Company's own seed-beds. At least half a dozen companies in Pennsylvania, with areas running up to 200 acres each, give reports of excellent results on the growth of catalpas. The Winchester Repeating Arms Co., of New Haven, Conn., has done considerable planting with black walnut for the production of gun stock.

The big concerns engaged in this activity employ experienced foresters.

In the 38 National Forest nurseries there were on hand at the close of the last fiscal year 23,390,675 seedlings and 13,176,575 transplants. Of the 29,446 acres reforested during the last fiscal year, 23,777 acres was sown and 5,668 acres planted. In accordance with an act of Congress of 1911 free planting stock was shipped from national nurseries to 540 settlers in the Kinkaid district of Nebraska. Thus a total of 189,000 young trees, including several of the pines and a small amount of hardwood stock, were planted. Reasonable success was reported on the growth of 79 per cent of these trees.

Perhaps the most interesting

Eucalyptus trees planted in the saw grass of the Everglades, Florida, 11 months old from seed.

work now being done by our national foresters is the experimenting with foreign species under the conditions of our country, and the extension of the sphere of domestic species. The Australian eucalyptus has been started in different parts of Florida, near Tampa and in the Everglades. At eleven months from seed the trees in the Everglades were doing nicely. It will require years to determine whether the scheme can be made a commercial success. In Florida there is also an infant plantation of cork oak. At two years the trees were in good condition. As the Pacific Coast states lack hardwood species of commercial importance the forester has instituted an experiment with black walnut and red oak in Washington to determine whether they are suitable to the soil and climate of that region.

Plantation of cork oak from seed sown in Feb. 1911,, two years old, East Bay Ranger Station Florida National Forest.

The experience of the National Service and of all these companies would tend to a few conclusions of great value to those interested in forestry. One is that catalpa and black locust are particularly subject to insect ravages in our country at this period. A second is that any region must determine by experiment what species are best for it—the native habitat not being always a sure criterion. A third is that great precautions and constant vigilance are necessary to prevent enormous loss by forest fires.

The End.

OMISSION

They say the near approach of Death
So stimulates the human brain
That all its Memories, in a breath,
Come into conciousness again.

Thus, at the Door of mortal strife,
The Soul in final judgment stands
To sum the value of that Life
Wherefrom It borrowed brain and hands.

It sets the Good against the Bad,
It clears the Evil with the True:
"This have I done with what I had,
This, that I might, I feared to do!"

I think that we, our courses run,
When stand we where these Passed have stood,
Shall marvel at the little done
Of actual Evil or of Good.

The current of our thoughtful acts
Is seldom either swift or deep:—
'Tis hard to dream laborious Facts
And sweet to dream in mental Sleep!

So, as our sun of living sets
And Memory folds us in Her pall,
Well may we find our worst regrets
In Things we have not done at all!

C. HENRY.

The DOPE on LYCURGUS

Done into UNITED STATES for "STEAM MACHINERY"

by S. MacHinery

HAVING ceased to Lysurge many many decades before the Dawn of Civilization as represented by the doping out of the Constitution of these United States, Lycurgus nevertheless managed to fix up a perfectly good republic of his own away over in a corner of what may be generally card-indexed as "Dago-land."

After his old man, U. Nomus, had a little private trouble with the meat man regarding the increasing cost of living, and retired permanently from politics, Fate had it all doped out for Lysurgy to be the Only Existing King Person in Sparta. In fact he had taken the oath of office and was all ready to be measured for his new crown, when an uncouth person rushed into the Royal Hat Shop and announced that Mrs. Polly Dectes, wife of Lysurgy's elder brother who had also retired from politics after holding down the king job for awhile, was "in an interesting condition." Whereupon the Royal Hatter's sale was all gummed up, because Lysurgy immediately cancelled the order remarking "Nix on this king stuff—Call me Prody-Cus from hence on." Which sounds foolish but is Spartan for Guardian of Infanty Kings.

Mrs. Polly Dectes, who was plumb tired of the Merry Widow stunt, tried to fix up a graft with Lysurgy to firmly suppress the interesting condition if Lysurgy would become her "second." But Lysurgy was Wise. That was His Job. So he led Mrs. Polly along with a Line of Talk until everything was O. K. and the King kid was safely in his mitt. Then he went right out and told the bunch about the perfectly new and good king they had. This tickled them so much that they called the king kid Chary Laus which is Dago for "Mob-Joy"—because it made the mob joyeous to get the straight dope for once.

This and other things made Lysurgy so strong with the people that his brother Leonidas, aided by Mrs. Polly, who was naturally peeved at having her second-hand affections thrown down, started to circulate rumors about his fixing up to feed the king kid dope some night when its nurse wasn't looking, making out that it had died of colic while he was "just holding it."

Peeved at this cruel suspicion, Lysurgy threw up his job and beat it for Crete, where he butted into politics again with the idea of picking up any little thing in the political line that might be useful and taking it along with him.

Having fed up on the Cretans he made a quick getaway to Asia, having an idea that mebbe the Ionians, who were addicted to joyrides and champagny water, might be able to show him a

Peeved at this cruel suspicion, Lysurgy threw up his job and BEAT IT!

better time than the Cretans who were strictly local-option with the accent on the local.

There is little doubt that the Cretans would have shown Lysurgy the time of his young life if he had not unfortunately got mixed up with a bunch of dime novels written by an estimable gink called Homer. These took his bright, young fancy so much that he spent the entire time of his visit gumming up his think-factory with them to the total exclusion of Tootsie of the foot-lights and the Gentle Joy Ride.

Having gotten some good ideas on the segregation of vice from Homer, he passed on into Gypsy-land and got some dope on the segregation of the soldiery that made a home run with him. He took that along with him also. He had gotten into the habit of taking along everything moveable in the think line that he came across.

Meanwhile, back tew hum the people were beginning to pine for the good old Lysurgy days again. Nothing seemed to be going right without him. Mother didn't even make pie like she used to when Lysurgy was a-round. So the bunch sent out a general invite to Lysurgy to come back and take his old job at a big increase in salary.

Having visited his pet clair-voyant at Delphi and having been told to wade in and hit the line hard, he packed his grip, booked a passage and came.

The first thing Lysurgy did after his return to the old home-stead was to round up the bunch and frame up a stunt to put the old political gang out of biz. Having gotten thirty prominent citizens to back him up, he handed out Colts and cartridges to them and arranged to get together in the market place to throw the Big Bluff into opposition.

At first the king kid Chary Laus got all fussed when he heard of the doings, thinking that they were aimed at his own little self. He made a quick get-away in the general direction of the brass skyscraper belonging to Minerva, probably with the idea of hiding in the barber shop, but was pinched by some of his friends who put him wise to the real dope and persuaded him to come in with the bunch.

It seems that this king person Chary Laus had developed into a spineless jellyfish. Archie Laus, his brother and partner in the king business is reported on good authority to have remarked about him "He ain't a crook, but he *is* afraid to break with 'em."

Lysurgy's first job was to arrange for a senate consisting of twenty-eight amiable and virtuous ginks who were to act in with the two king persons to keep the people where they belonged. At the first big mass-meeting held in the open air, the people were allowed to stick around on condition that they should agree with everything that the senate put up to them and keep their heads shut.

Just at first the people didn't seem to care about the picturesque populace part they were cast for, and started to ball up the speeches; but the senate soon put a crimp in their little game by passing a bill providing that if the populace behaved like a bunch of crooks it was up to the senate to fire them out. Which they did.

Next Lysurgy found that the country was overrun with bums and hoboes because of the unequal distribution of the land and decided to make a reapportionment. Being a sure-enough spell-binder he succeeded in getting the land sharks to agree to this little stunt and promptly cut the country of Laconia in general into thirty thousand chunks and divided them equally among the agricultural rubes. Sparty City he cut into nine thousand allotments and handed out to the townies. Each lot was arranged so that it would grow about eighty two bushels of grain per annum, with enough oil and bug-juice to keep the family owning it happy.

After putting this hot shot over on the people it is reported that he stood back and remarked "Pipe the happy family, would you!" but if this is so it is supposed that he said it while he was alone with himself.

Still not ready to let up, he wanted to fix it so that the people would divvy up on their moveables as well, but fearing that they would get a down on him if he put it to them in plain talk, he fixed up a little con game for them. He put the kibos on the Imperial Dollary, calling in all gold and silver and issuing instead iron money so everlastingly heavy that a man would have to tote a dray round with him if he wanted to buy more than two nickle cigars a day. From this comes our modern expression "Iron Men," applied to Samoleons.

This was certainly the clear stunt for Lysurgy's hand, put-

Was to carry a portable ELECTRIC crane around with him

Lysurgy turned just in time to get a terrific swipe on the bean.

ting the tough element all to the nixie in one fell swoop. The only way a second-story man could deliver the goods was to carry a portable electric crane around with him, which was unpopular owing to the chances of being spotted by a peculiarly wide-awake fly-cop or bull.

In this way he also cleared up the Tenderloin, because, after one or two young sports had floated in with a couple of dollars loaded up in wagons to have a good time, the bunch decided that they couldn't afford to pay expressage on a real bank roll and so picked up and beat it out of town overnight.

At the same time all the music professors, near-artists, jewellers and other dealers in Useless Luxuries bought their tickets for the beyond, not pining to accumulate any large quantity of iron-ore since they were not in the Steel Plant business.

He also fixed it so that the people should all eat in one common café, to prevent any of them making hogs of themselves in the privacy of their own shacks. This was certainly some collection of incidents for one person to have put across on the free and independent voters of Laconia, and it is not surprising that the worm turned at this last bit of gall.

The Newly Had-Been Rich got out a Vigilance Committee for the purpose of stringing Lysurgy up to the handiest lamp-post, and chased him all down Main Street. But Lysurgy was some runner himself, and managed to put a large quantity of undisturbed atmosphere between himself and the crowd, all except one young hoodlum called Al Cander who kept right on his heels. Hearing feetmarks behind him Lysurgy turned just in time to get a terrific swipe on the bean which bunged up one of his optics.

Somewhat discouraged by this trifling incident, Lysurgy turned to the crowd and made a grandstand play with his battered up head piece, succeeding in making a hit with the better element to such an extent that they not only apologized but handed Al over to him with instructions to "take it out of him."

Tickled to death to be carrying his own scalp, Lysurgy beat it back to his domicle with Al., who was naturally expecting to get all mussed up in return for bunging up Lysurgy's perfectly good optic. Lysurgy, however, took him home with him and gave him a job as butler, hoping that by being in constant attendance on him, Al. would find out that he was not such a bad old gink after all. Al. afterward became a Reformed Character.

After this episode the Lacedaemonians ruled the Big Stick out of their constitution entirely, making it a Public Nuisance to be even seen carrying one.

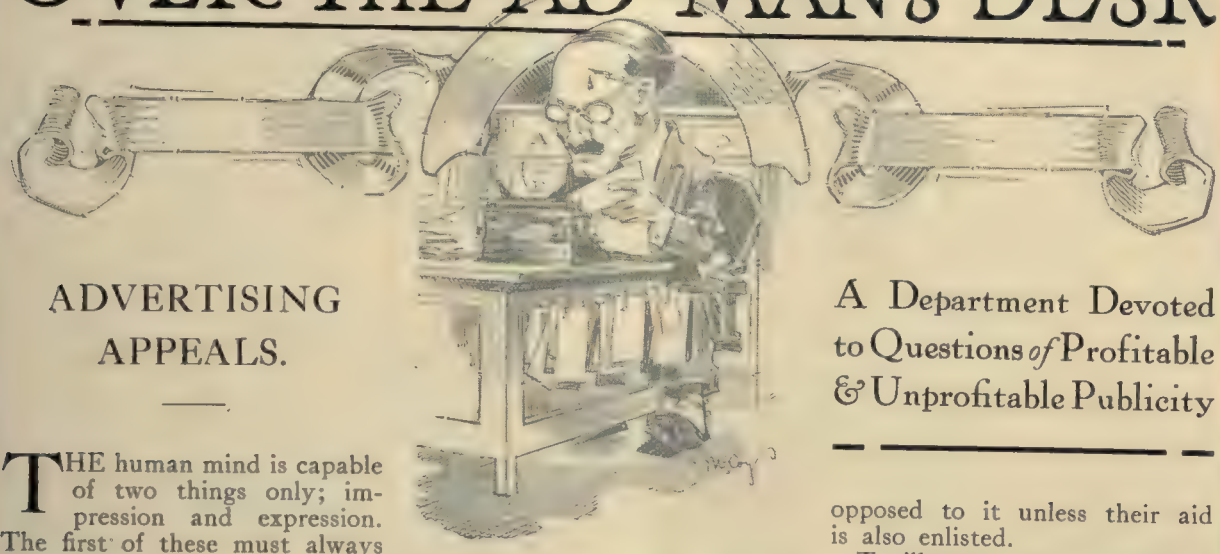
(*To be continued in the next issue*)

A BULLERICK

A logger who lives down at Laurel
Would never get into a quarrel
  Till they told him, one day,
  That his bull was a bay
When he *knew* that the critter was sorrel!

C. HENRY

OVER THE AD-MAN'S DESK



ADVERTISING APPEALS.

A Department Devoted to Questions *of* Profitable & Unprofitable Publicity

THE human mind is capable of two things only; impression and expression. The first of these must always preceed the other.

Impression takes the form of Ideas. Expression, of words or actions.

The aim of an advertisement is to create an impression which will result in expression taking the form of favorable action.

Mind impressions may be produced thru any of the five senses either directly or thru association of ideas, and may also be created without any external stimuli thru the exercise of that power of abstract thought peculiar to Man. With this last, however, we need not treat in this article.

The appeal of a written advertisement can be made only thru the sight sense.

Its primary power of appeal depends entirely on its power to awaken curiosity; but with this it must be remembered that curiosity is only the first step to an Idea and of itself is valueless.

Satisfied curiosity causes the impression of an Idea on the inquiring mind: the nature of that Idea then determines whether it shall die inactive or command expression in words or action.

It is vitally necessary that curiosity be awakened by the perception of what will prove to be a forceful and favorable Idea of the advertised product.

All impressions must create their power of expression thru working upon some particular group of those pre-conceived Ideas which constitute the basic human emotions.

Thus the advertising appeal may be made to Fear, Pride, Love or Justice and to any of the countless constituents of these four fixed groups of Ideas or to combinations of them.

Each of these groups has its direct opposite: Courage, Humility, Hate and Injustice, with which, however, advertising appeals have little to do.

The more directly the appeal impresses some one of these basic emotions, the greater will be the likelihood of the subsequent Idea becoming strong enough to demand expression.

Great caution must be observed, however, to guard against the simultaneous awakening of two antagonistic emotions, since each will offset and neutralize the energy of the other.

This is particularly liable to occur when the appeal to Fear is made among people of cultivation and refinement.

THE APPEAL TO FEAR

Fear was the first and is still the strongest of the four basic human emotions; but, in modern man, it is continually at war with the other three of later growth, whose final function will be to expel it from the mind entirely.

The appeal to Fear must be immensely powerful then, if it is to conquer the ideas of Pride, Love and Justice which will be opposed to it unless their aid is also enlisted.

To illustrate my meaning we will consider the advertising of a life-insurance company, which may appeal directly to Fear as in the "this might happen to you" type of ad. or to Fear, Love and Justice as in the "protect your family from want" type: of these two types, the last is obviously more likely to produce favorable action.

"This might happen to you" appeals to Fear only and will be combatted by both Pride and reasoning Justice.

"Protect your family from want" appeals to Fear, Love and Justice and will be combatted only by Pride (which, in this case, will insist that the subject is skilful enough to leave a sufficiently large fortune without insurance.)

In order to limit the appeal to Fear, it is necessary to separate It into its component Ideas.

A man fears six things in the following order of general intensity:

(1.) Death.
(2.) Poverty.
(3.) Disease.
(4.) Accident.
(5.) Violence.
(6.) Dishonor.

When any one of these is acted upon it will, almost always, set up the impression of ideas in the other group of emotions which will have the effect of neutralizing Fear to greater or lesser extent.

Thus the Fear of Death will be combatted sometimes by

Courage; the direct opposite of Fear; sometimes by Reason, which is a form of Justice; sometimes by Religion, which is a form of Love; sometimes by Self-Sufficiency, which is a form of Pride and sometimes by all or any of these combined.

This antagonism will be found more nearly natural and automatic in the case of the Fear emotion than with any of the others. This is because Man has definitely decided in his mind that Fear is an unworthy as well as an unnecessary emotion, and one which he must overcome if he is to gain spiritual growth. His mind therefore trains itself to *resist* Fear.

The other Emotions *may* be attacked; but Fear, unless it is so overwhelming as to become Panic, *will* be attacked.

This must be remembered and taken into account in making an advertising appeal to this emotion.

So far as possible, the goodwill of the naturally antagonistic emotions must be obtained at the same time.

Compare these two headlines, both appealing to Fear:—

(1.) "*You may be fired tomorrow*," if you are untrained.

(2.) "The *trained* men always has a job!"

Both appeal directly to the Fear of poverty, but while the first arrays against itself all the phases of emotion in Pride and Justice, the second secures the positive support of these same emotions.

Can it be doubted which would prove the more successful, particularly since this example of appeal must be applied to people somewhat above the panic stage of Fear.

In making the appeal to Fear then, be very sure that you secure the support, or at least the neutrality, of the other emotions. Otherwise your effort will usually result in a brief mental conflict ending in a deadlock; sometimes, but very seldom, in favorable action; sometimes also —which is to be guarded against —in *unfavorable* action, when the battle goes too strongly against the Idea of your creation.

THE APPEAL TO PRIDE

After Fear, Pride is, generally speaking, the strongest emotion of which the mind is capable; while it is even more constantly in evidence than Fear.

Pride always has Self as its object, and therefore affords the most powerful leverage for the personal advertising appeal.

Pride manifests itself around four general forms:

(1.) Possessions.
(2.) Power.
(3.) Knowledge.
(4.) Environment.

The first of these is the ad. man's strongest assistant after the sale has been consummated; altho it may also be advantageously used in making the first sale.

This is the power behind all "You want the best" advertising.

The appeal to Pride of Power —second in this list—is the keynote of all "Your time is worth *money* advertising, and of the countless personal appeals to a man's business self-esteem.

The third in the list—Pride of Knowledge—is liberally made use of, in connection with pride of possessions, by all publishers of "high-brow" books and periodicals; and also, in connection with the Fear of Poverty, by correspondence schools.

It is an interesting side-light on human nature that a man is usually more proud of a reputation for Knowledge gained thru the possession of "difficult" books than he is of the Knowledge he actually possesses.

The fourth and last of this group—Pride in environment—is the basis of all "Do it for your home city" campaigns. It is also responsible for much money wasted in advertising cities of which the inhabitants are proud to the inhabitants of other cities who are equally proud of their cities.

In this Idea is rooted the sentiment of patriotism in all its forms.

THE APPEAL TO LOVE

Love manifests itself about three things:

(1.) Beauty.
(2.) Comfort.
(3.) People.

To the first of these the ad. man may make his strongest appeals of form and color, thereby not alone strongly attracting the curiosity of his reader, but also satisfying it first thru this favorable emotion.

Care must be taken, however, not to make so strong an appeal to this one phase of emotion that the Idea engendered thereby will remain fixt at this one point, unless the object of the appeal is to sell some beautiful thing on the strength of its beauty alone.

Beautiful copy has a powerful attraction for most minds, but the copy must also carry with it a forceful thought-transference to some other emotion which will produce desire for personal possession of the advertised article and resolve to possess it.

A beautiful illustration of a motor-truck will attract the sympathetic attention of the prospect thru his love of beauty, but it cannot make the sale until other emotions have followed it: principally conviction of the Justice of quality-economy claims and prospective Pride of possession.

Love of Comfort is a strong asset to the advertising man, since it is a universal phase of emotion upon which he can most often and most effectually play.

The development of this emotion thru advertising is responsible for the high standard of living which now exists in this country.

Love of People is used in advertising almost exclusively in connection with gift seasons and its application is too obvious to need comment.

An instance of its exceptional power is found in the recent Florists' campaign for "Mother's Day," which resulted in the purchase of thousands of dollars worth of flowers at the suggestion of this powerful and lofty emotion.

THE APPEAL TO JUSTICE

Justice, the last and sternest of emotions, tho' inherent in

HEISLER
Geared Locomotives

Are especially adapted for heavy hauling on steep grades, sharp curves and uneven tracks. For logging, switching and pulling on main lines, mills, furnaces and industrial purposes.

Just off the press, new detailed descriptive catalogue 108.

Heisler Locomotive Works

ERIE, PENN., U. S. A.

51,000 BUYERS OF LUMBER.

The Southern Lumberman's "Directory of Lumber Consuming Factories" contains the names of every factory consuming lumber, every wholesale lumber dealer, and every retail lumber dealer in the United States, as well as every lumber consuming factory in Canada. For the factories in the United States data is given showing just what lumber they use, what grades and sizes.

One of the largest lumber companies in the country writes us: "We do not see how any up-to-date concern could afford to be without it."

The price is $15 per copy, and the book will be sent on ten days approval to any responsible concern.

Contains 912 pages of accurate, up-to-date information of incalculable value to the lumberman.

PUBLISHED ONLY BY

Southern Lumberman

Nashville, Tenn.

THE Buckbee-Mears Co.

Engravers-Designers

—an organization to be distinguished from that of the ordinary "cut house"—equipped to co-operate with the advertiser in designing and engraving sales literature of the highest efficiency—to give it a "class" and distinction which will demand attention and favorable consideration—

NEWTON BUILDING

ST. PAUL, MINN.

mankind, is least dynamic in its Ideas.

Justice depends upon reasoning for its Ideas and all appeals made to it in advertising must first be reasonable.

To this pallid emotion most of our "reason why" copy is addressed in theory, but, fortunately for its resultfulness, not in fact.

Successful "reason why" copy almost invariably leads the reader away into other more dynamic emotions to secure its end.

The number of purchases concluded at the dictates of cold reason alone would not be sufficient to warrant a great advertising campaign; and, on analysis, all such will be found to contain other and more human appeals.

The "Postum" campaign, with its pregnant "There's a Reason" appealed more to Fear—the fear of disease—than to reason.

Even the stately pharmaceutical advertisements appeal less to the layman's reason than to that peculiar manifestation of the Pride of Knowledge which leads men to honor the statements of those presumed to be possessed of it—the doctors, in this case.

Having made the Appeal to Beauty, the Appeal to Justice is an excellent "follow-up" to carry the prospect's mind into those emotions better calculated to find expression in action: for we must always remember that our advertisements must move the passionate multitude as well as the intellectual few.

In the foregoing I have been content to merely suggest the direction of effectual advertising appeal; leaving the subtler shadings to be added by the reader.

My main effort has been directed towards showing that every advertising appeal can be analized into one or a combination of the groups specified.

The more thoroughly the actual aim of the appeal is realized, the more forceful can it be made, and the more readily can the arousing of emotions antagonistic to it be avoided.

The End.

Buying Lumber

Then you want to know all about western prices for fir, redwood, spruce, sugar and white pine, redwood and cedar shingles!

SUBSCRIBE FOR AND READ

PIONEER

Western Lumberman

$2.00 per year
Published twice-a-month

311 California St.
SAN FRANCISCO

The Trade Paper.
"I know hundreds of high, prosperous business men, manufacturers, dealers, jobbers, craftsmen, and I can not recall a single instance in which the mos mentally successful man does not read his special paper. He subscribes for it and he pays for it promptly. In many instances he orders extra co- ies from time to time and distributes them. He is boosting the whole game all along the line and this very fact puts him in a frame of mind where cur- rents of success come swirling in his own direction. He is moving on the eternal tide of progress. "When you subscribe for your trade paper and assimilate it, you are uplifted, inspired, given cour- age, pep, intellectual vim and vigor and enough information to make you free from the trials and tribulations which beset the man who doesn't know. "These things all have a direct influence on the bank and mental balance. "The trade paper binds everybody in the business into a fraternity, which spells length of days, be- cause it 'serves' and its service is based on specific knowledge."—Elbert Hubbard.
Fighting Ma
her Camp
ST. LOUIS LUMBERMAN
FLINT-RIM
SPROCKET WHEELS
Heavy-Duty Chains
Link-Belt Company
DIAMOND IRON WORKS
Saw Mill Machinery
Dry Press Brick Machinery
HIGH GRADE BUILDING BRICK
The Fernbaltz Brick Machinery Co.
REX
MORE-JONES BRASS & METAL CO.
Portable Cross Tie Mills
Portable Saw Mills
Standard Portable Saw Mills Co.
BEARINGS
EXTRA QUALITY FOR YOU
"MAJESTIC"
GUARANTEED
METAL
P. J. DOWD KNIFE WORKS

You Can Get Along Without it, But—

YOU'LL HAVE A FEELING THAT you are missing something.

The LUMBER INDUSTRY, statistics show, is the world's greatest industry. To keep yourself posted on all its happenings by word of mouth is unsatisfactory and incomplete.

There are thousands of men in every branch of the industry who realize that to profit most they must not only get ALL the lumber news, but ALL the lumber ideas and articles they can of a helpful nature. These same thousands realize, too, that they can get this valuable information, and the spirit it conveys, ONLY through the journal devoted to their trade. So to try to get it any other way is bound to leave a feeling that you have missed something.

In keeping with the industry it represents, the ST. LOUIS LUMBERMAN is a big, many paged journal that has between its covers every issue, articles, pictures, stories, reports, and a hundred and more things interesting and valuable to every member of the lumber industry.

Yet as valuable as it is to men who want to know MORE about the lumber business, and reap the returns that knowing more brings, one can get along and probably win success without the ST. LOUIS LUMBERMAN coming to him every two weeks, but he will always be troubled by that "missed something" feeling.

Send for a free sample copy to-day and note the character of the things you have been missing.

$2.00 will bring you the 24 issues for one year.

The ST. LOUIS LUMBERMAN

LUMBERMEN'S BUILDING, ST. LOUIS, MO.

Are You Interested In the Forests?

¶ Are you a lumberman, a logger, a manufacturer, or an owner of timberlands?

¶ Do you want to know all there is to be known about the forests, their use, their value, their protection?

¶ Do you want to read articles by experts on every phase of forest conditions affecting your business?

SUBSCRIBE FOR

AMERICAN FORESTRY

The only Magazine of its kind in the United States

$2.00 a Year

AMERICAN FORESTRY
Washington, D. C.

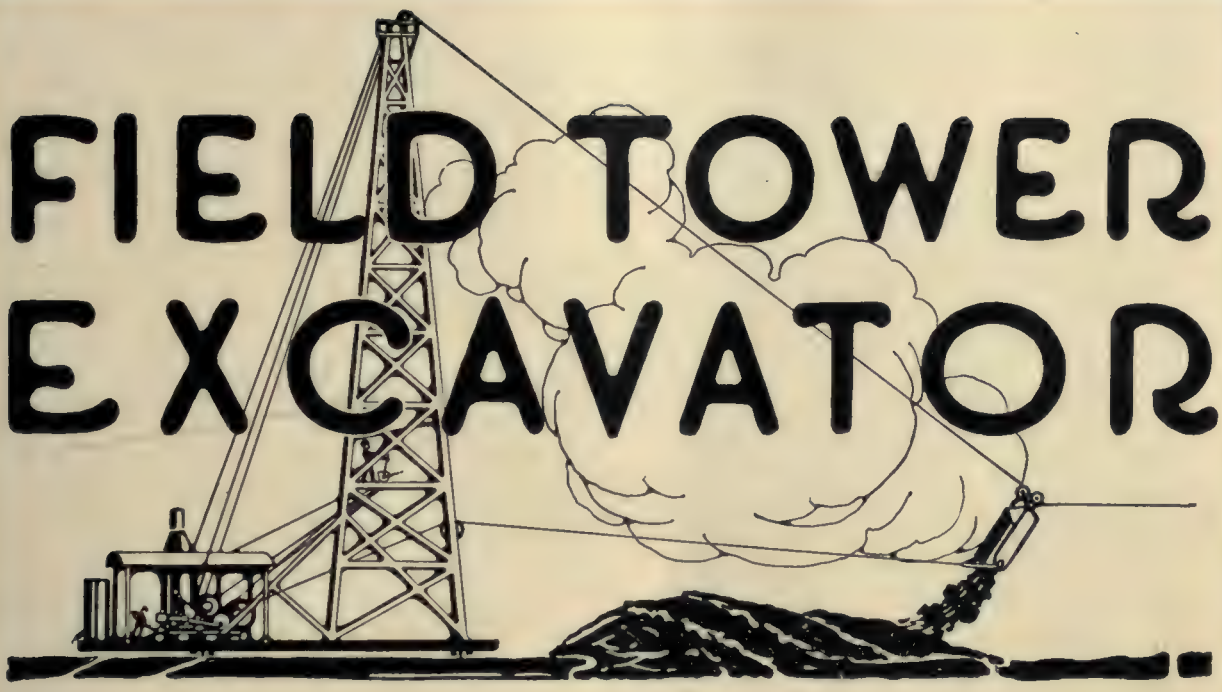
¶ The art of moving logs from stump to mill is one of the basic industries. When the movers dodge deliveries the lumberman paces the quarter deck with appropriate language. The process is variously described as hauling and skidding. When the roads are good and the ordinary four legged animal engineered with a raw hide, or else a modest eight wheeler will bring 'em across it is called hauling. When a combination of aeroplane, alligator and mud cat is required it is dubbed skidding.

The power applied in this interesting process is of three principal types. First, the coal scoffing steam screamer; the long horned-cud chewer and the long eared high kicker. The first of these three engines is a modern invention; had an emergency birth when some one bantered—"bet you can't get them logs;" it hails from Duluth. It is a machine with an insatiable workatite, subsists on pine knots, cypress knees, muddy water and monkey wrenches and barks up the smoke stack. One of these engines will outlast several generations of engineers and notice every bad crack Mr. Engineer may make.

The long horned variety of engine is a plain slide valve, under-stroke, fourlegged affair that is generally operated non-condensing. It was made for a bull but was disfranchised in youth to curb constitutional gaiety, and in the interest of industry. This is a slow speed engine without change of gear and plays possum when things go crooked or the fodder runs low. This engine carries its carbureter in the lower jaw and works over the unconsumed fuel between pulls. It is the only one of the three that don't come back at the engineer for insult or abuse. This engine generally goes on the retired list during the administration of a single engineer.

The long eared variety of logging engine originated in the zoo of our ancient stock fancier Abraham. (Ike's father.) It has several speed changes for variable roads and strange engineers. This engine is reversible without the link motion or other frills that are used to put the back up into a steam engine. It generally stays in the go ahead motion in times of peace, but quickly re-

FIELD TOWER EXCAVATOR



THIS machine is particularly adapted to the construction of levees and the digging of drainage and irrigation canals. It consists of three principal parts; tower, engine and bucket.

THE TOWER is a framed structure ranging in height from 50 to 100 feet according to the distance from which material is to be taken. It requires no guying and can be moved on its own wheels over the tracks furnished without a minute's delay.

THE ENGINE is double drum, double cylinder and is equipped with a 150 lb. pressure boiler. From the front drum, the drag-line runs thru a sheave (the height of which can be varied) direct to the bucket. From the rear drum, the gravity line leads over a sheave journalled on top of the tower, down thru twin-sheaves on the rear of the bucket and is secured by a slidable clamp to a 200 ft. anchor line laid at right angles to the tower the desired distance away. As the machine moves along its track, this clamp is slid down the anchor line so that the gravity line is always opposite.

The digging angle of the bucket can be varied by manipulating the gravity line. When the load arrives at the machine it is dumped and the bucket is returned to the digging point by tightening up this line.

A complete illustrated description of this machine is contained in "Clyde Special Messenger No. 3" which will be sent promptly on request.

CLYDE IRON WORKS

Manufacturers of CLYDE-GRADE Hoisting Machinery

HOME OFFICE and FACTORY: DULUTH, MINN., U. S. A.

"There's No Place Like Home"—Pages 34-35.

American Lumberman

CHICAGO MAY 31 1919

A SELF-MADE CANADIAN

READ IT, because—

You get it *every week.*

It will keep you posted on markets, *every week.*

It will give you the news of the entire lumber world, *every week.*

It contains dependable and authoritative editorial comment and opinions on matters of interest to the lumber trade *every week.*

Its many departments and special articles provide a veritable compendium of instructive, informing and entertaining lumber miscellany, *every week.*

Its able staff of editors, reporters and correspondents, and its exceptional news gathering facilities enable it *every week* to present such a comprehensive and dependable review of all matters pertaining to the lumber trade as to have earned the title of "World's Greatest Lumber Paper".

ADVERTISE IN IT, because—

It reaches practically ALL the trade.

Its advertising pages are considered the leading directory or guide to "Where to Buy".

It will give you MORE circulation than any two other lumber papers combined.

It will give you BETTER circulation. The average credit rating of its subscribers exceeds $100,000 each.

You will get inquiries from firms who will make the most desirable customers, many of whom could not be reached through other media.

Its thousands of readers BUY it and pay $4.00 a year for it IN ADVANCE, thus guaranteeing a bona fide circulation among people who want the best and have the means to pay for it.

Ask for sample copy and further particulars.

American Lumberman

World's Greatest Lumber Paper

CHICAGO

verses or calls for the automatic stop when the load pulls back too hard. This engine is extremely sensative to the treatment received and will keep a revengeful heel on tap for the cruel or impolite engineer as long as he's on the job.

¶ It don't take but little oil for proper lubrication; but like the Texan with his gun it wants that little awful bad, and in the right place—and at the right time. Generally the machine which carries the most visible oil (oiled all over) is least likely to have oil in the places where it belongs.

¶ We cannot go far on the results of our own experiences; Methuselah is the only one that lived long enough to grab all the dope and he seems to have drawn a blank; we need the trade paper to tell us how the other fellow does it and catalogues to tell what he did it with.

¶ The furnace is the Sanctum Sanctorum of the steam machine; the stomach that of the human machine; both are often left to shift for themselves.

¶ A two inch pipe is FOUR times as large as a one inch pipe and costs only about TWICE as much; don't stint on pipe sizes, especially on long leads.

¶ One pound of air THROUGH the fire is worth a ton alongside or over it. It takes about 18 pounds of air to properly burn one pound of fuel; who said "light as air?"

¶ The difference between a wrong steam gauge and the coal box is that one is a bunk and the other a bunker; have the gauge changed to bunkum at once.

THE LOGGER'S NIGHTMARE

(*Continued from page 204*)

And so it was with Logger Jim:
—One night he sought the supper tent
And filled him to his heart's content
With less of wisdom than of vim!

Stretched on his hard, uneasy bunk
He lay and watched the moonlight creep
Around the tent, but couldn't sleep
Because he was so full of junk.

He heard the mice among the flour,
He heard the whispering woods, and then
Among the ticking of Big Ben
Chimed out the eerie midnight hour!

A lurid flash of greenish flame:—
And Jim's hair stiffened at the roots
As a Dread Shape in logger's boots
Took sudden form and spoke his name!

"Friend James, they tell me thou art some
Ripsnorting logger; so, in jest,
I dare thee to a moonlight test:—
Hitch up thy eighty bulls and *come!*"

American Forest Trees

"Written in the Lumberman's Language"

¶ It tells all there is to know about every commercial tree in the United States, and

¶ You can rely absolutely upon its technical correctness in every detail.

¶ We have left a few hundred copies of this beautifully bound edition after a very satisfactory sale and

¶ Can make quick shipment on ten days' trial upon receipt of your order.

PRICE, PREPAID, SIX DOLLARS.

Hardwood Record
537 South Dearborn Street
Chicago, Illinois

FORT PITT SPRING AND MANUFACTURING CO.
PITTSBURGH, PA.
COIL AND ELLIPTIC SPRINGS
VANADIUM
STEEL
SPRINGS

A postal or letter giving your address will bring you specification blanks which will be of use in sending inquiries for springs.

Locomotive Gears

OF "STAG" Manganese Steel will average at least six times the life of ordinary steel. They are tough and strong and stubbornly resist wear.

Are guaranteed to be economical.

If you have dimensions of your gears write us. If not buy through the locomotive manufacturer and specify our steel.

Edgar Allen American Manganese Steel Co.

Chicago, Ill. Chicago Heights, Ill.
New Castle, Dela.

A 75 per cent Saving in Lubrication

SHAFTENE

Save money, time, machinery and labor. Sent on 30 days trial, no charge for amount used if SHAFTENE fails to solve your lubricating problems. Ask for list of satisfied users. Manufactured and sold ONLY by

THE TROPICAL OIL CO.
CLEVELAND, OHIO

Jim lay in silence for a space,
Yet was he calm and cool beneath
—So cool indeed, that all his teeth
Were tangoing inside his face!

Yet, drawn by some mysterious spell
He could not question or dispute,
He rose and found his other boot
And donned his mackinaw as well.

Beneath the moon's pelucid beam
They hiked it thru the piney wood,
Till, suddenly, forninst them stood
A four-line skidder spouting steam!

"This" said the Shape with ghastly smile,
"I back against thy eighty bulls:—
And each shall make sufficient pulls
To skid a thousand logs—and pile!"

Then, gazing on that bulk of steel,
Jim found his voice and laughed in scorn
"These bulls of mine aint newly born
And fattened up for fambly veal:—

"But if they were, believe me bo',
I'd back 'em 'gainst yon tin machine
For every nickel, dime and bean
I own!—You're on, and—let 'er go!"

Then in a moment, as he ceased,
His gangs came to him thru the wood
And by the four-line skidder stood
A strange crew—neither man nor beast!

—Never since they were sired, I ween,
Have Jim's bulls worked so hard and fast
As on that night which swiftly passed
Among the moonlight cool and green!

Each log is dogged before it comes
And then undogged (which takes a while!)
And slow cross-hauled into the pile
Because bulls have no decking drums.

But meanwhile, from the railroad track,
The four-line rehaul skidded logs:
Nor driving nor undoing dogs,
And piling while the tongs went back.

So, well before the night was sped,
It had its thousand logs and more
While Jim was short of thirty score
And half his bulls were nearly dead!

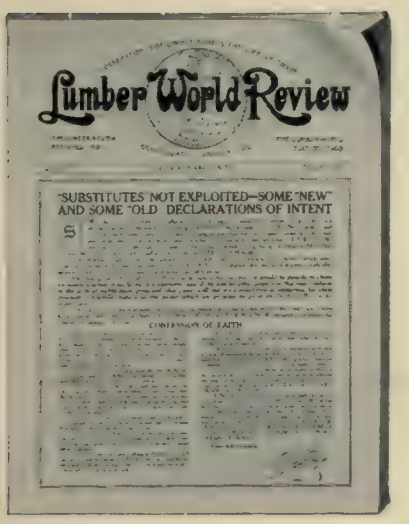
* * *

A siren blowing loud and shrill,
Woke Jim and found him in his bed
—The blankets up around his head—
Full of malaria and chill!

"Begosh!" he cried, "Twas just a dream!—
But just the same, there aint a doubt
That when I'm up again and out
I sell them bulls and skid with Steam!"

—C. HENRY

"Experience With A Cable Tram Road"



WOULD you like to know the experience some men have had with a cable tram road?

It is always interesting to know how the "other fellow" does things. Even if we don't always agree with him we get some idea that may mean many dollars to us.

In our December 10, 1913, issue we published a practical discussion of one man's experience with a cable tram road.

The LUMBER WORLD REVIEW publishes practical ideas, plans, etc. in every issue. The methods used by the *other fellow* to make his success are full of ideas for YOU.

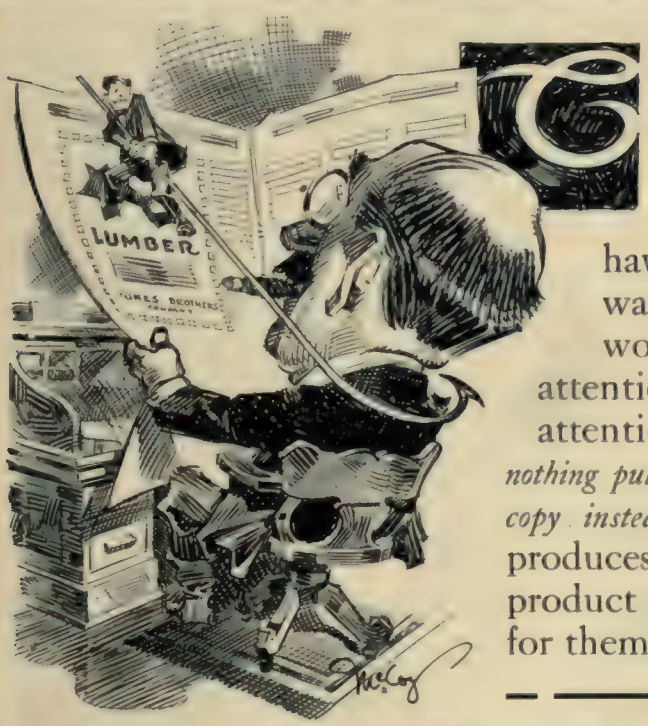
Read the LUMBER WORLD REVIEW and get the "other fellow's" viewpoint.

A postal card request will bring a sample copy to you FREE by return mail. Send for YOUR COPY TODAY.

LUMBER WORLD REVIEW

SUITE 1740 TRANSPORTATION BUILDING

CHICAGO, ILL.



THE selling-power of your Advertisement can never be greater than its *pulling power!*—Because people have got to *read* it before they can want what you advertise and they won't read it unless it *commands* their attention. How can you command attention to your ad?—Remember that *nothing pulls like a picture. Put a "cut" in your copy instead of in your price.* It costs less, produces more!—Let us picture your product so that your prospects may see for themselves! . . . . . .

Duluth Photo-Engraving Company

ARTISTS ENGRAVERS
COMMERCIAL PHOTOGRAPHERS ELECTROTYPERS

Duluth, Minnesota

ADVERTISING IDEAS

are harder to get than just good printing—and, after all, it's THE IDEA that captures the reader's attention and excites his interest in what you have to sell.

You may judge from this copy of "Steam Machinery" that the M. I. Stewart Company does fairly good printing, but

STEWART SERVICE

is the really BIG end of our business from your standpoint.

WE SPECIALIZE IN ADVERTISING SERVICE FOR MANUFACTURING LUMBERMEN and are prepared to help you plan your entire printed campaign if you will let us.

We want to do your printing ourselves, but more than that, we want the printing we do for you to be PRODUCTIVE, so that you will come back for more.

M. I. STEWART COMPANY

A RELIABLE SOURCE OF
SALESMANSHIP IN PRINT

DULUTH:—"Great Port of the
Northwest."

Vol. 2. No. 8.

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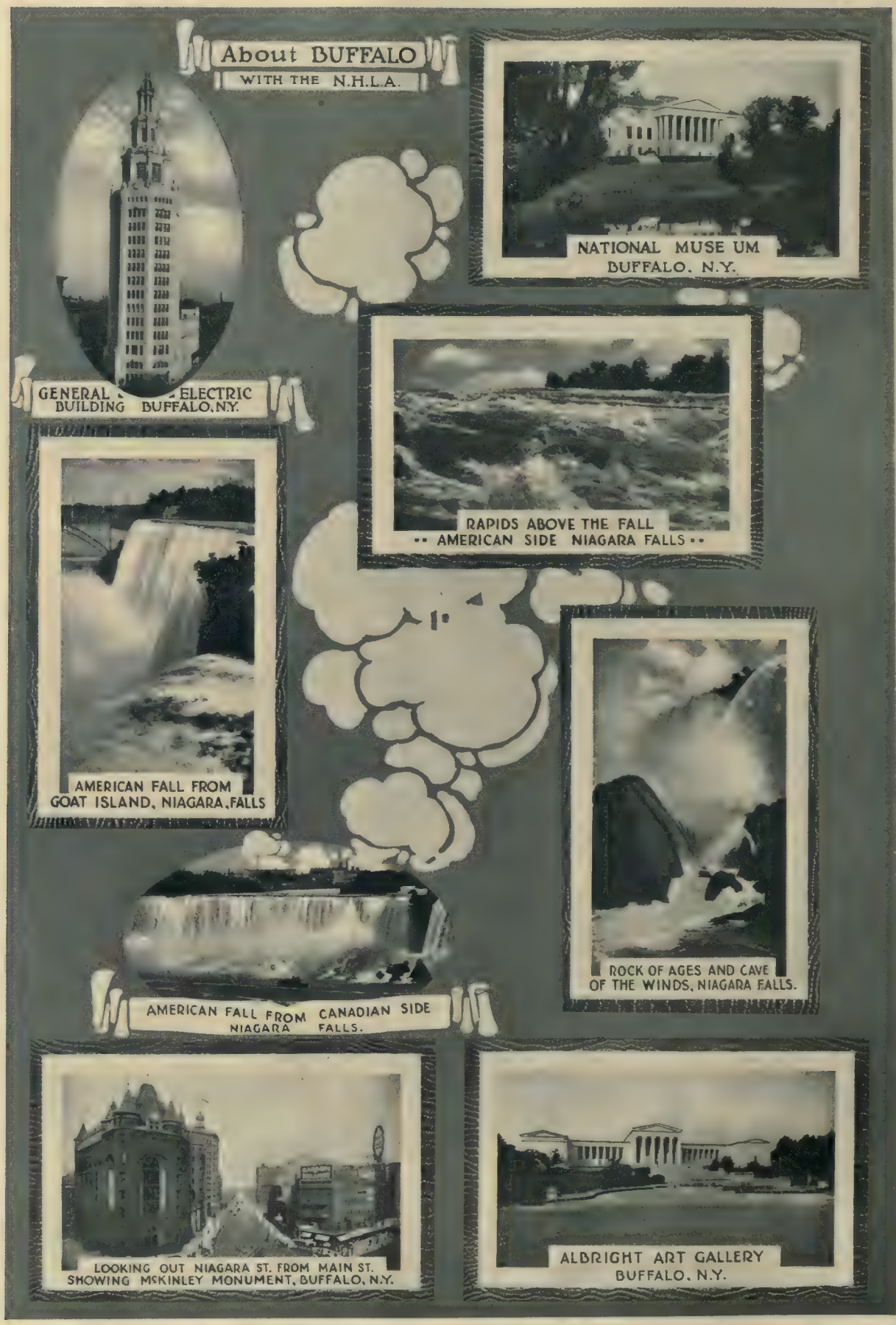
A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

for

THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER


About BUFFALO
WITH THE N.H.L.A.
GENERAL ELECTRIC
BUILDING BUFFALO, N.Y.
NATIONAL MUSE UM
BUFFALO. N.Y.
RAPIDS ABOVE THE FALL
•• AMERICAN SIDE NIAGARA FALLS ••
AMERICAN FALL FROM
GOAT ISLAND, NIAGARA, FALLS
ROCK OF AGES AND CAVE
OF THE WINDS, NIAGARA FALLS.
AMERICAN FALL FROM CANADIAN SIDE
NIAGARA FALLS.
LOOKING OUT NIAGARA ST. FROM MAIN ST.
SHOWING McKINLEY MONUMENT, BUFFALO, N.Y.
ALBRIGHT ART GALLERY
BUFFALO. N.Y.

A Monthly Magazine of Men, Machinery & Methods

STEAM MACHINERY

DULUTH MINN.

Charles H. Mackintosh Managing Editor

Our Covenant with Our Readers

We absolutely and unconditionally guarantee never to publish in our columns advertising matter of a fraudulent or misleading nature, nor to accept copy from any firm whatsoever until we are satisfied beyond all possibility of reasonable doubt that such firm is in a position to live up to the letter of its proposals and has done so consistently in the past. This we do, not because we are better or more moral than other magazines of our day, but because we conceive the true purpose of a magazine to be service to its readers, and we would serve well in order that we may be well served.

STEAM MACHINERY PUBLISHING COMPANY

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OUR EDITORIAL NEEDS.

"STEAM MACHINERY" wants and is willing to pay for the co-operation of its readers in editorial and reportorial work.

We want to keep abreast of conditions in all departments of the logging world; giving our readers the first news and the true news about labor saving methods in their respective fields.

We want to know what the men behind the machines are doing to cut costs and increase efficiency in getting logs, laying and lifting track, caring for their machines and so forth.

We believe it will profit the men who are doing things to let us publish the evidence of their efficiency; we know it will benefit the industry as a whole to read reports which will have a tendency to increase practical knowledge and kindle ambition.

We know that the man who has these facts is not usually a writer, but we have plenty of pen-pushers who will attend to dressing up such articles for publication.

We want and will pay for the *facts* without caring a cuss about the form they come in, just so our not-very-intelligent reporters can get the point plainly and work it into perfectly pleasing paragraphs for the printing press.

We will pay according to the value of the idea, such value to be judged by the amount of space our editorial staff finds it worthy to occupy, at five dollars the full three column page of ten point type, excluding illustrations, for which we will pay one dollar apiece.

THE PUBLISHERS.

The Editor Thinks

THE hardest trial humanity has to overcome is its own mental inertia. ¶ We hate to be jolted out of our rut, to be forced to think new thots and do new things. ¶ But there is a deathless spirit at work among us which *will* manifest itself from time to time in miracles which soon cease to be such because we all learn to do them. ¶ First we discourage its efforts with an absolute negation. "It can't be done!" we say, with Olympian finality, and go back to our tiny task-habits. ¶ But the restless one works out the principal, solves the mechanics, builds the machine, sets it to running and *does* the impossible thing in front of our unbelieving eyes. ¶ Then what a howl goes up to high heaven! ¶—"It will overturn industry", "It will throw thousands out of work", "It will glut the market!", "Kill the fool!", "Smash his machine!" ¶ Meanwhile the great spirit of Unrest sits back and smiles:—He does not count time in minutes or in men's lives and he knows that very soon the unrestful idea will have become a human habit. ¶ So it was with the printing press and the linotype, with the steam engine and the loom, the telegraph and the telephone, wireless and the aeroplane. ¶ So it will be with every new thing which comes into the world. ¶ Always and forever, men will spend more time and greater energy in fighting the new idea than they would need to study, to adapt and to adopt it. ¶ And the only reason for all this travail at the birth of a new idea is that men's minds must overcome physical inertia before they can change to a higher mental speed. ¶ The conditions must always exist to some extent. ¶ Men will always find some difficulty in grasping the new and discarding the old. ¶ But there needs no such grinding of gears and heating of parts as surrounds such a change today. ¶ The fact is that our mental gear most often runs in a groove upon its shaft—a groove made in dust and oil and dirt formed of old unreasoning habits and dead dogmas. ¶ So, when the shift comes, the gear must force its way thru all this filth before it can mesh into the new speed. ¶ It must and will do it at length, for the Hand upon the lever is heavy and Its purpose irresistible. ¶ But how much swifter would the change be made and how much easier would it be upon the machine if the shaft were kept brightly polished and well-oiled, ready at all times for the inevitable change! ¶ This, then, is one of the greatest and hardest things we have to learn:—the lesson of an open and a *ready* mind.

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EVERY INDIVIDUAL, firm and community prospers in direct proportion to the service rendered Society. ¶ Often you and I cannot strike a proper balance between what is done and what is obtained, because we are not in possession of *all* the facts. ¶ But the Law of Compensation guarantees the result. Serve well and you will be well served. ¶ Service to win success, however, must be complete. ¶ It must not stop at the big things and let the little ones look after themselves. ¶ Inefficient service in even the last

link between the creator and the consumer may often offset to a vast extent the value of the real service. ¶ I have in mind a great steamship company plying between Sarnia and Duluth on the Great Lakes. ¶ These people have invested a vast sum of money in a fleet of passenger boats. ¶ Recently they added the keystone to their structure of service in a new boat; better, bigger, more beautiful then any other on the lakes. ¶ This boat enabled them to offer better transportation service than any other line and the pleasure-seeking public appreciated the fact, purchasing passages by their hundreds. ¶ And so the steamship company secured a great opportunity to cinch their service and send out five hundred fifty self-appointed advertising agents all over Canada and the United States. ¶ Instead, these passengers were received at the gangway by a so-called "Inspector" having the face of a frigid funeral mute and the manners of a troglodyte. ¶ His real job was to take up tickets, look after the ladies and generally attend upon the comfort of the passengers with relation to each other and his employers. ¶ His was not a very big job, but it was incredibly larger then himself: in consequence he conducted himself as tho he was a cross between the Boss Bully of the Boat and a Deputy to the Deity. ¶ The passengers mildly resented this, nicknaming him The Beastly Basilisk before they had been an hour on the boat, and this made him cross. ¶ He maintained his attitude of a stern parent dealing with irresponsible and mischievous children thruout the voyage, thereby doing much to dampen the pleasure of every passenger aboard who was not too sick to be worried. ¶ A dozen or more left the boat at the first stop, refusing to remain in a position whence it was impossible to escape from the insults of this boor. ¶ Others left at each subsequent stop, and by the time the entire five hundred fifty were discharged at their respective destinations it is a safe guess that at least twenty thousand dollars worth of irreparable damage had been done to the company: enough to hire the services of a man-for-the-job ten times over. ¶ For there is a negative advertising in dissatisfied public opinion which is vastly more powerful than any artificially-created suggestion money can purchase. ¶ When your friend, whom you have known for years and learned to trust, tells you *not* to take a certain boat on a certain line because the service is *rotten*, how many newspaper advertisements, pretty booklets, posters and such-like will it take to outvote his advise? ¶—A million dollar advertising appropriation would leave you unmoved as a mollusk in the face of such decided and unprejudiced warning! ¶ Now this boat-line has created *five hundred fifty* decided and more-or-less unprejudiced warners against their service who will go up and down the land from now till helfrezover offsetting anything they can say to the contrary. ¶—And all because they put the obviously Wrong Man in a little thousand dollar job which, however, was the *connecting-link* between themselves and those they tried to serve. ¶ It will not be too costly a lesson, however, if it teaches them—and others who have not yet blundered—that *courtesy is the last thing on which to economize.* ¶ It costs nothing, but its value can be made greater than the million dollar service it represents.

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EVERY BUSINESS has its inception in the mind of one man. ¶—This has become a business-bromide or tradetruism thru over-repetition; it is time somebody grappled with it again and

flung it further into the fields of philosophy. ¶ Who will volunteer for this arduous and dangerous duty? —Hearing nothing but an inviting silence, we will step into the gap ourselves and bravely sacrifice our grey-matter in the cause of come-on sense. ¶ The big successful business of today—big and successful in the sense of producing men and minds as well as Dollars and Dimes—is so because it has an Elder Brother as its Boss. ¶ You know the Elder Brother breed. ¶ It bears Bosses who become such in the divine right of knowing how to teach others to do and be their best. ¶ The Elder Brother to the Business must always be an Elder Brother to his co-workers, because a business consists in men and not in matter. ¶ Countless cases of canned-goods, heaps of hardware, miles of muslins or loads of lumber do not make a business any more than a cellarful of coal makes a fire. ¶ These are the *things* whereon the minds of men must play else they will rot on their wharves or in their storehouses. ¶ Being thots done into things, they must be done back again into such thots as will fire the imagination of the multitude and make them feel the ondrive of desire. ¶ And, when the desireful ones arrive, they must be met by keen but consciencious clerks who will tender them come-back service. ¶ The boss stakes the business, but his "help" makes it—or breaks. ¶ And the Boss who prefers to be such rather than an Elder Brother will never know how much pleasure and profit there was in his business. ¶ Love is a stronger and longer-living force than Fear. ¶ It contains ten times the Business Turning Units to the pound. ¶ And so, when love is the fuel beneath the business-boiler, power is plentiful and the great gears sing their song of Service loudly and clearly. ¶—Blessed indeed is that man whose helpers are Younger Brothers to the Boss!

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THE PSYCHOLOGY of conflict is Nature's strongest, and often her last, resort. ¶ When men can no longer react to this it is time for her to hustle them out of the way for men of more alert minds. ¶ For thousands of years she has been training men's blood to bound at the trumpet-call to battle, at the silvery crash of swords, the chant of thirsty missles, the shock of rank on rank. ¶ All that, in the end, she might loose a sleepless force among her children to drive them into the friendly fight of Service. ¶ She had to paint bright pictures to appeal to infant brains of long ago: crimson and silver and gold were her colors, nor was she sparing in the use of them. Her songs had the rhythm of the heart-beat, suggesting the majestic sweep of marching men. ¶ But now she sings a softer and more seductive strain. Her pictures are painted in more subtle tints. For men have learned to look higher and see further than of yore. ¶ And yet forever she uses her old call of conflict, stirring men on to strive with each other in well-doing for the sake of the joy in it. ¶ To each who strives and wins she gives his mete of happiness. To each who strives and fails she gives another chance. ¶ Only to those who will not strive does she bring defeat, utter and irrevocable. ¶ There are no dead heroes and live cowards in her scheme of things. ¶The hero lives forever in his deeds, the coward dies out among his own oblivion. And so the race advances slowly but inevitably, mounting the peak beyond. ¶The cowards fall by the wayside and so remain, but the heroes of victory and the heroes of defeat march on in the van under the blue banner of Service, fighting only for the right to Serve and Serving only for the great joy of worth-while work well done.

HITTING THE HIGH SPOTS
· WITH THE HARDWOODERS ·

Being the personal experiences of *S. MacHinery* and his *Graflex* at the *Seventeenth Annual Con...* of the N·H·L·A in Buffalo, N.Y.

BUFFALO is larger than Duluth, where S. MacHinery came from, altho it resembles that multi-zenith city in many other respects.

For example, Buffalo also claims to be the second (or is it third?) largest port in the world and to top the universe when it comes to iron ore.

—This last claim may be partly substantiated by the fact that Buffalo gets a great part of the ore leaving the Port of Duluth—twenty million tons of it each year, I believe Alderman Sullivan said in his address of welcome to the Convention.

Buffalo may be big, in fact *is* big, but she could barely house all the hardwooders who sought her hospitality during June eighteenth and nineteenth, if the Hotel Statler was any criterion —and they do say, the Statler is quite *some* criterion!

The Scribe had taken the precaution to wire in his reservation a week or so in advance, but it availed him nothing.

Three weeks before the gavel clanged every reservable room had been reserved, so the amiable clerk informed the midnight-arriving Scribe.

Visions of writing a monograph on "Begging a Bed in Buffalo" flashed thru the labyrinth of our mental processes, but the amiable clerk aforesaid banished them into the realm of unpublished bunk by calling a taxi and sending us, C. O. D., to the luxuriously lazy Lenox.

Here they gave us two bedrooms, a sitting room and a bath, all en suite, for the ridiculously trivial sum of three Woodrownians.

We did not get a great deal of sleep, because our hereditary desire to get the full value of our money kept us shifting from one room to another all night.

We also used the bath *twice* but this was really rendered necessary by the fact that we had travelled over the M. C. in the loping Wolverine, and the greater part of three states had been transferred to us on the way.

Next morning the Statler with its conventional magnet drew us back to it even as the ubiquitous Pole is reputed to draw said implement of nauticulture.—Tho why a Pole should persistently exercise his pencil on a magnet in preference to any other form of still life entirely escapes our artistic imaginatione.

Let it pass!—It will never assume the importance of an international question, many of which we will need to touch upon in these our memoirs.

The hardwooders in the Statler were never sufficiently static to be counted, but we would venture an estimate of five hundred sixty-three and a half—the last being S. MacHinery who is only half hardwood (the *upper* half, his friends affirm!) the rest of him being yellow pine and other substitutes.

Now so much has been said, sung and written already about the purely prosaic things at this seventeenth convention that the Scribe conceived the fertile idea of plying his pencil on the pleasure-part of the meeting more particularly.

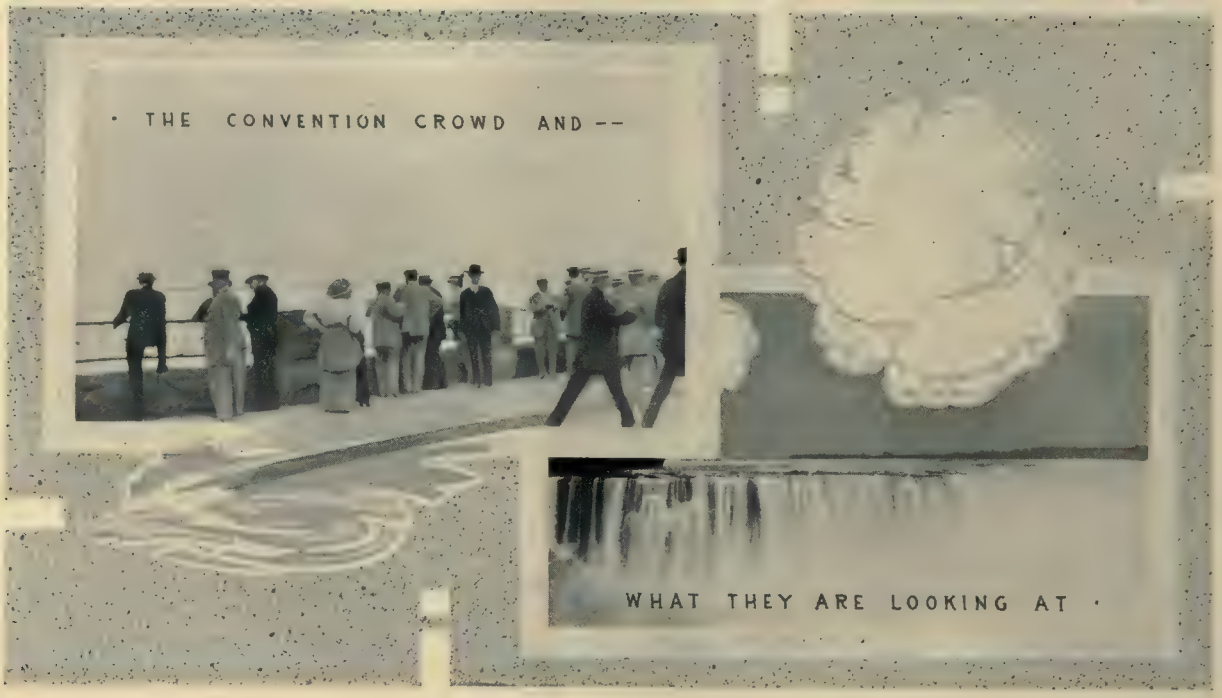
Pursuing this conception, we come at once to the now-historic Trolley Trip thru Niagara Gorge, which used up all the afternoon and most of the evening of June eighteenth.

We started from the Statler at two p. x., passing the million-dollar Albright Art Gallery and the site of Buffalo's past Pan-American Exposition of which nothing remains but her Historical Building:—"Sic transit gloria mundi!", as Julius Caesar remarked to Mrs. Caesar on Tuesday Morning, meaning that wash-day was over for another week.*

After meditating on what the site of San Francisco's Expo will look like in nineteen-fifty, we permitted the cars to run into Niagara Falls, N. Y.

Here we attempted the perilous passage over the river, nothing untoward happening to any in the party except that a Canad-

*Foot-note:—S. MacHinery is in error here: as every schoolboy knows, "Sic transit gloria mundi" is the motto of the state of North —or is it South?— Carolina, except that "semper" is used instead of "transit" and the last two words are omitted, the word "tyrannis" being substituted for them. The Editor.



ian Customs officer came and stole the number of our Graflex—probably fearing that we would sell it in the Dominion and buy a farm with the proceeds.

Pausing for a few minutes in front of the New Clifton Hotel, we had an opportunity to admire the judgment of whoever chose this hotel for the Mexican Mediators.

From its big circular balcony a wonderful view of both falls is to be had for the taking.

—If the mediators fall down on their mediations, however, it will not be without great gobs of mental suggestion!

Later, thru the courtesy of the Buffalo Lumber Exchange, we had dinner at the New Clifton and treated the mediators to a few samples of singing, which must have made them pine to be back in Argentine and Brazil or even in a more Chile place.

A very deplorable incident slightly marred the harmony of this otherwise delightful meal.

Whoever had charge of the singing part of the festivities, started the crowd a-singing some American patriotic song first, following with "The Maple Lead Forever" and sandwiching "God Save the King" in between "Yip-i-addy-i-aye!" and "What's the Matter with Father?"

The International Code of Ethics demands that the national anthem of any country shall be sung first at any sangerfest held in that country if any national songs are to be executed at all.

Hence, considerable apprehension was displayed by the more cogibund of those present, some fearing international complications and many wondering whether we would be permitted to return to the dear old U. S. at all.

However the crowd made honorable amends by giving three loud yelps for Georgius Rex, and their former break was indulgently overlookt by the authorities.

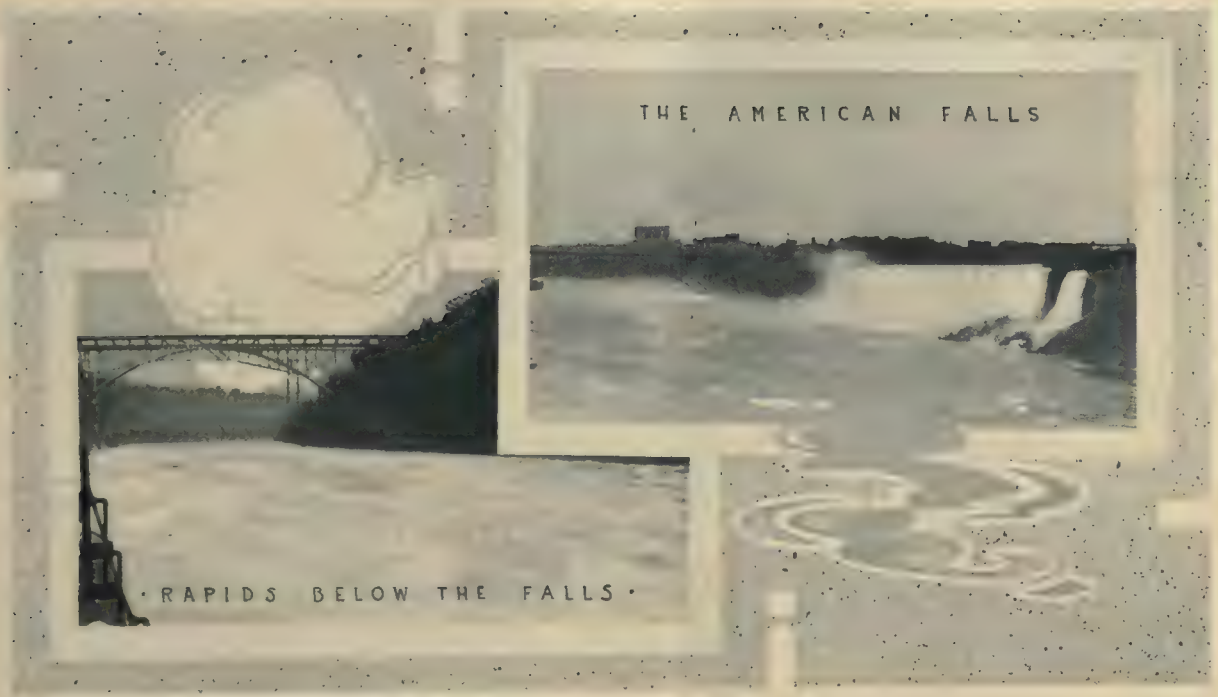
But again we have fallen into our vicious habit of running a little ahead of our muttons.

Before arriving at this banquet we have to engulf great eyefuls of scenery, the quality and quantity of which is perhaps better expresst in the following from a souvenir folder gotten out by the Buffalo bunch:—

THE NIAGARA RIVER AND THE FALLS

Were we taking this trolley trip a few hundred centuries earlier, we should not find the Falls where they are now located, for the reason that they have moved up stream about seven miles, having gradually eaten away the limestone ledge that marked their crest until they have finally reached a point conveniently near the New Clifton Hotel and the gigantic power houses which borrow from them some thirty-five or forty thousand cubic feet of water per second.

The Niagara River, beautiful, mysterious, rich in tradition, commands the interest and admiration of every visitor. Form the moment the waters of Lake Erie pour into the channel of the river, they seem to hurry with excited anticipation to the mighty cataract a few miles distant. The river's swift current is divided at a point opposite the northerly limits of the City of Buffalo by an island, ten miles in length. This is Grand Island. Beyond the island the river makes a four mile dash to the Falls. Here, conspicuous among the most sublime of Nature's works, an expanse of water two-thirds of a mile in width and from four to twenty feet in depth is hurled over the precipice to be buried 165 feet feet below in the calm of the big basin. Two miles further down stream the turbulent waters come to the surface again and break into the Niagara Rapids where, confined by the rocky walls of the gorge, twisting and snarling, they pursue their angry course.



THE FRONTIER

The Niagara Frontier is one of the fighting grounds of the nations. Many have been the conflicts here between Indian and white man, hard and furious the battles between American soldier and British; and for the hundred years and more which culminated in the triumph of Wolfe on the Heights of Abraham, an event which marked the beginning of the history of the United States, there was no territory more jealously coveted or more bitterly contested by England and France in their struggle for the possession of this continent, than was the Niagara Frontier.

THE GRIFFIN

The first sailing vessel to plow the waters of the Upper Great Lakes was built in the spring of 1679 by LaSalle who christened her the Griffin. It is said that the boulder which now marks the spot near the mouth of Cayuga Creek where the Griffin was built, was taken from near the old Portage Road over which LaSalle hauled the material from Lewiston for the construction of his vessel. On the 17th of August, 1679, with LaSalle in command, she sailed up Lake Erie—a marvel to the Indians,—a monster, this little craft of 60 tons burden. Passing by the sites which were destined soon to become the settlements of Detroit and Mackinaw, she was loaded at Green Bay with furs and started on her return trip to Niagara, but she never reached Niagara nor was any trace of her ever found.

The extent and importance of the commerce of the Great Lakes to-day are evidenced by the fact that during the year 1913 the tonnage passing through the Soo was 77,000,000 tons, as against 36,000,000 passing through the Suez Canal and about 11,000,000 tons estimated for the Panama Canal at the end of ten years. Buffalo has become one of the worlds' greatest ports, more than 10,000 vessels having entered this harbor during 1913 with cargoes aggregating more than 19,000,000 tons. In addition there were enormous receipts and shipments by rail, making Buffalo conspicuous among the great cities of commerce.

BRIDGES

The first suspension bridge ever constructed for railroad purposes was built across the Niagara River chasm in 1855, and is known as "the old suspension bridge."

In 1868 a carriage and foot bridge called "the new suspension bridge" was built about one-eighth of a mile below the Falls. On January 10, 1889, it was blown down during a storm in which the wind developed a velocity of nearly 100 miles an hour. The bridge was rebuilt at once.

The famous cantilever bridge, accomodating the double tracks of the New York Central Railroad System, was built in 1883 about 300 feet above "the old suspension bridge". Steel towers 140 feet high are built up on stone piers approximately 40 feet in height. The cantilevers are 595 feet long, the total length of the bridge being over 900 feet.

Located just below the cantilever bridge is the steel arch bridge of the Grand Trunk Railway.

THE POWER HOUSES

Augustus Porter used Niagara power to run a sawmill which he built in 1805, diverting for his purposes a small amount of water from the upper rapids of the Niagara River. Today five power companies are developing from these waters about 450,000 electrical horse power, equally divided between the American and the Canadian sides of the river. Extensions now under construction will when completed, bring the total horse power developed by these five companies up to 732,000.

WALKING A ROPE ACROSS THE RIVER

On June 30, 1859, in the presence of 50,000 people, a tight-rope walker by the name of Blondin, walked across the river on a rope suspended from opposite banks between Niagara Falls and Suspension Bridge. The rope was over 1,100 feet long, and from 160 to 170 feet above the river. Subsequently he repeated the feat several times, on one occasion being blindfolded and carrying a man on his back.

THE BATTLE OF QUEENSTOWN HEIGHTS

On the 13th day of October, 1812, General Brock commanding the British forces defeated the Americans under General Scott at Queenston Heights. General Brock lost his life in this engagement. The Brock Monument on Queenston Heights was blown up in 1838 by one Ben Lett. The corner stone of the monument as it appears to-day was laid in 1853, and the monument completed and dedicated a short time later.

THROUGH THE RAPIDS IN A STEAMER

In 1861, the "Maid of the Mist" ran the Niagara Rapids, making the distance from the foot of the Falls to Lewiston in 17½ minutes. Joel R. Robinson was the man who dared to pilot her on this perilous trip. Two men were with him, an engineer and a machinist. The boat was not the original "Maid of the Mist," but was a little steamer of about 110 tons, built in 1854. Upon reaching Lewsiton at the end of her mad exploit, she appeared to have suffered little damage except the loss of her smoke stack.

A FATAL ATTEMPT

Captain Matthew Webb, an Englishman who had accomplished many notable swimming feats, lost his life on January 24, 1883, in an attempt to swim through the Niagara Rapids and Whirlpool. His body was found in the water below Lewiston four days later.

DEVIL'S HOLE

On September 14, 1763, a British company carrying supplies to Lewiston was ambushed by a large body of Seneca Indians

on the cliff above the chasm known as Devil's Hole. Only three of the British escaped, the others either being butchered by the Indians or having hurled themselves into the chasm to escape the tomahawk and the scalping knife.

OVER THE FALLS IN A BARREL

On October 24, 1901, Mrs. Anna E. Taylor of Bay City, Michigan, went over the Horse Shoe Falls in a barrel which had been designed by her for that purpose. When removed from the barrel she was suffering greatly from shock and bruises, but seemed to be fully recovered after several weeks rest and quiet.

September 19, 1895—On this day occurred the first through trip from Buffalo to Niagara Falls by trolley.

June 18, 1914—On this day the N. H. L. A. made Niagara famous.

Next came the delightful dinner described in earlier paragraphs, after which we climbed our cars again and clattered back to Buffalo, singing the chorus of a little song, composed especially for the occasion, which went something like this:

"Take us back to Buffalo
Where the Schlitz and Blatz o'erflow:
—And the Falls can go to thunder
Or to Lake Ontario!"

Next day they started the convention again and made Brother Babcock president for 1914-15.

After which they held a banquet which was *some* banquet, if anyone should happen to drive up to you in a Packard and inquire.

The menu was tastefully done into French so that none need know what he was eating and consciously disobey the doctor's instructions.

After the banquet, a number of the deadly but indispensable sex came in to show off their voices and other things.

A souvenir songbook was presented to each guest with the mute motion that he help disturb the piece suggested by the chairman.

The motion was carried unanimously.

They finally unwound the last spring by about midnight and then *everybody* went home and the seventeenth annual convention of the National Hardwood Lumber Association slid into History covered with laurels.

The End.

LINES TO A GENERAL:

Others have sung of the glories of Greece,
And the heroes of battle and fire;
So to General Practitioner, Army of peace,
I tune up my work-a-day lyre!

Aint no scareheads for HIS battles,
No-one makes a bit of fuss;
He just grins, when he wins,
'Cause his battlefield is US.

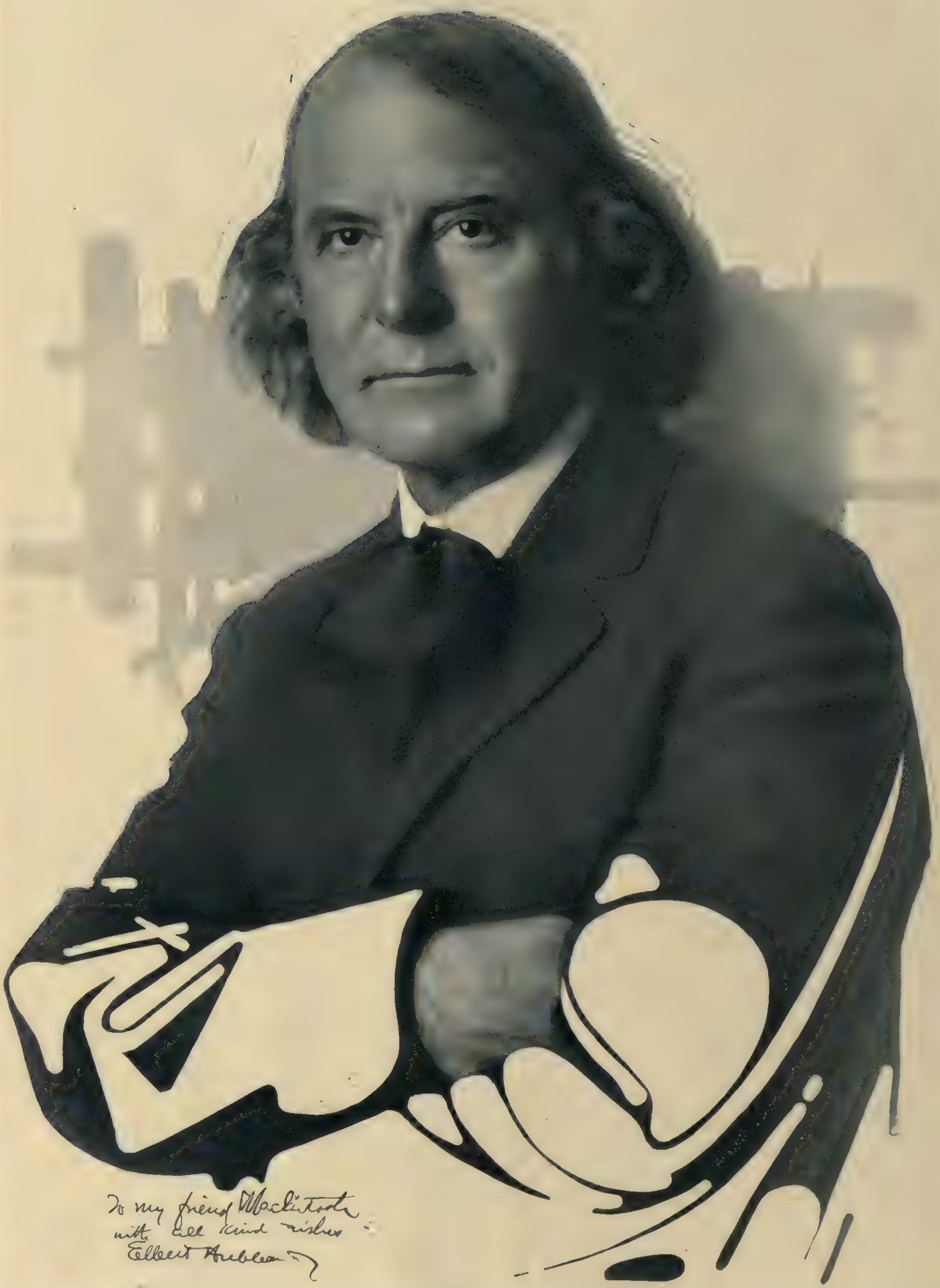
Keeps his Army in a handbag,
Ten-inch gun inside his hat,
—That's his scout, scents, 'em out,
Lets the Doc know where he's at!

See him knock the cocci cock-eyed!
See him biff the bacilli!
Deadly germ, twist and squirm,
'Taint no use, you've got to DIE!

Doc, perhaps we do not love you,
But we realize your worth;
When we're sick—need you quick—
You're the biggest man on earth!

And now, in conclusion, I pray you to bring
A wreath, twined of laurel and bay,
Which over the dome of the General fling,
While I silently beat it away!

—C. HENRY.


To my friend Mackintosh
with all kind wishes
Elbert Hubbard

A · LITTLE · JOURNEY

TO THE HOME OF ELBERT HUBBARD

WHO IS DONE INTO EAST AURORA AND WHICH WAS DONE BY CHARLES H. MACKINTOSH FOR "STEAM · MACHINERY."

A KEEN dagger is a deadlier weapon than a blunted sword.

Oftentimes the thin edge of wit is blunted by overhoning and the baby blade parries the dull stroke, driving home while the mob howls "Habet!"

Then the mob whoops merrily homeward, leaving the Cosmic Coronor to his self-assigned autopsy.

The verdict is voiced usually in one word:—Excess.

The dear departed overdid something.

He overtrained or he overslept; he overate or he overfasted; he overestimated his power to come on or he lived too long.

But people are apt to speak kindly of the dead because they are no longer in competition.

So they chew "Here *lies*" on a ton of marble and follow up with what the deceased was always too modest to claim for himself.

They make him lie on his grave as well as in it.

Then they catch the car home and go on making babies, barrels, boats, books and bottled beer secundem artem.

And the Extinct Ego worries least of all.

BUT Elbert Hubbard lives in East Aurora even as East Aurora shall live in Elbert Hubbard.

And tho another hundred tell you that Hubbard is a has-been or a humbug, his home gently crowds the whole century into the Clubrooms of Ananias, Apostle of Envy.

They wait with their hands hanging over the parapet, thumbs down; this mob of mental malcontents who, having thinkeries, think not.

Because they have constipated conceptions while Hubbard plies a prolific pen, they admit that he originates one tenth of what he signs—perhaps.

But his sword is not shattered and his blade is still bright: it will be many moons before the buzzards buzz about his body.

And America will be a monarchy before all his work has wilted into Oblivion.

HERE writes no fanatic about the Fra.

I know as well as he that much of what has been roycrofted onto hand-made vellum will eventually line the pantry shelves or cleanse the Keen Kutter.

But this is essential, for no man can make a masterpiece a minute; and Hubbard himself admits that he is human.

Even Homer could not drive homers every time he went to bat.

And the only way never to write rot is never to write.

NOW about this Hubbard human, who has done himself into East Aurora which is in Erie County, New York.

Breezing out of Buffalo in the "Pennsy" one gets there in half an hour or so, together with a great company of commuters who live in East Aurora and take no care to conceal the crime.

Then comes the choice between hiring a hearse or horsing your own hand-baggage.

The Roycroft Inn is only a mile or so in among the trees, but it is difficult to hook a handbag all the way up to the desk and then do justice to an autograph.

—We are slightly stuck on our signture, S. MacHinery and I; but we will never boast about the one we left on the Roycroft Register!

The one bitter disillusion of the visit now caught me unawares:—

I had always understood it as a basic Roycroft ruling that whatever is worth having is worth doing.

I remembered the anecdote of the Chosen One who growled "Don't you have no bellhops around this dump?" and was subtly squashed by having the Fra tote his grips up to his room for him.

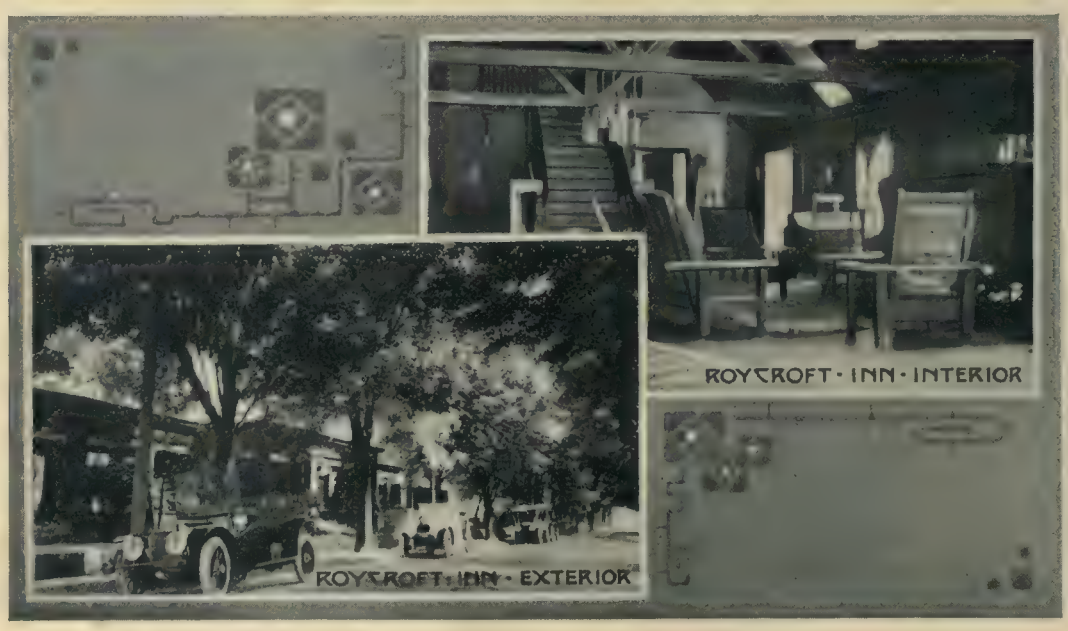
So, when the Industrious Sister had finished accepting her suggestion that I required the best suite left in the house and had given me a key to Herbert Spencer, I bravely squared away preparatory to going after those grips again.

But to my loathing and horror, rose up a recent Roycrofter in shirt-sleeves who robbed me of my divine right to dig without so much as a "'scuseme!"

Thus are the dearest draperies of imagination rudely raked from our cringing persons by the crude fingers of fact!

It was too much!

—I punctuated our progress along the peristyle with shrill cries expressive of disillusionment and took red revenge on our arrival by slipping the intruding slave a dented dime:—thus pauperizing him and making him a fit culture-bed for graft-germs.



Passing back along this peristyle I noticed a board advising one that "They Will Talk Anyhow." And they *do* except while masticating Maple Pecan Patties which the Fra invented so that his guests would not monopolize the conversation. I tried one—and it only cost a dollar to have the gold filling replaced in my back tooth. But we digress:—

Roycroft rooms are abreast of penal reform in that they have names instead of numbers.

Each bears the cognomen of one biographed by the Fra and famous in spite of it.

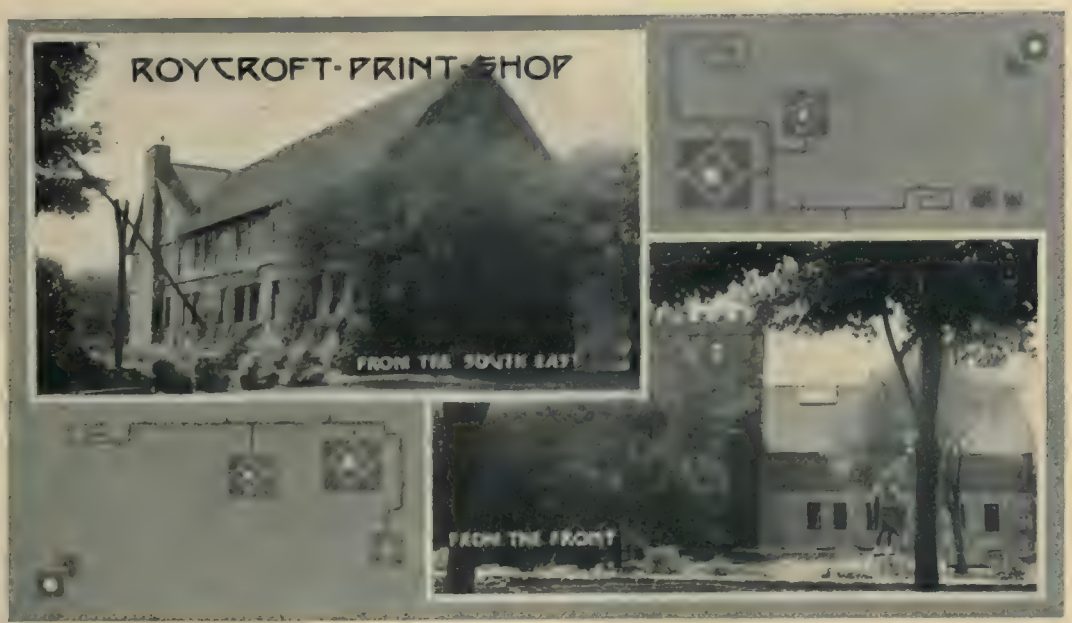
Mine was a cenotaph-en-suite to the memory of Herbert Spencer.

It contained two rooms and a bathroom, a couple of beds, oodles of Roycrofty carpentry, a silent but all-embracing odor of sandalwood or somesuch sublime stench, a copy of the American Bible *not* placed there by the Gideons, a Guest Book into which you were supposed to blow your soul, and two pictures of the late lamented Bert done during different incarnations.

In addition there was a monument to Jawndee Rockfellow in the form of a vase of carven crystal tortured into a kerosene container.

This last was undoubtedly costly and probably efficient but, as Napoleon said of the Guards at Waterloo, it was *not* war. It was murder.

There the durned Thing was, however, for they had to leave it



somewhere since it was too costly to uncreate.

The whole layout, including the crystal curse and your meals, costs just five Wilsonians per diem payable when you leave if you do, otherwise weekly.

The Fra was tew hum they told me at the desk where I filed Herbert, his key, for future reference; and so I went over and camped on the campus till he came past.

"This is Elbert Hubbard?" I inquired, recognizing the inquiree from a picture I had seen of him somewhere a long time ago.

And then I applied a terrible test to the Fra's memory.

—"Do you remember me?"

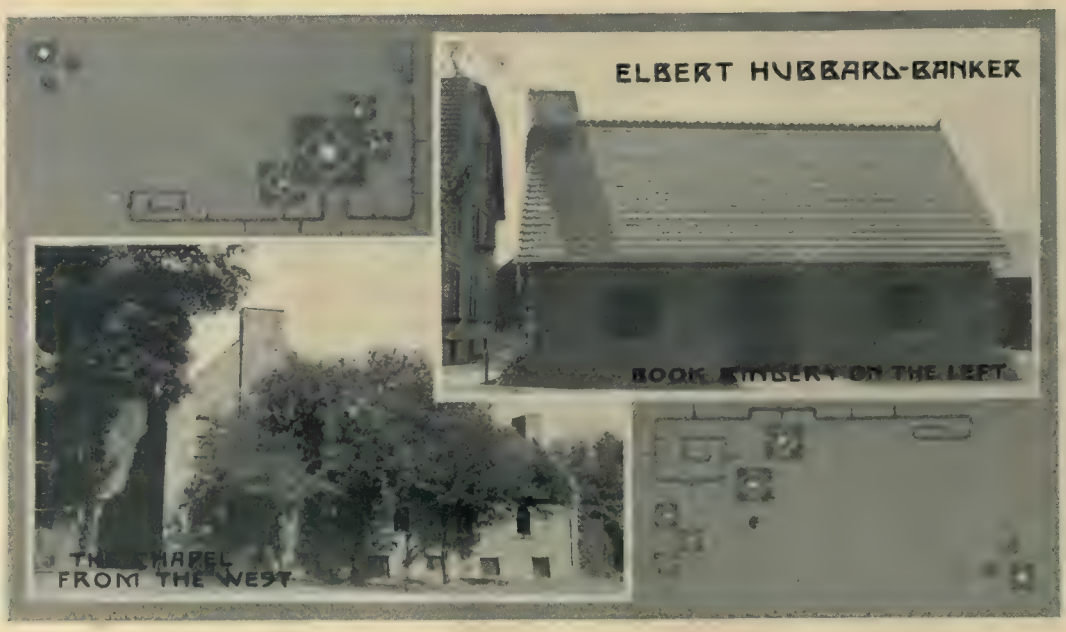
You know I met him in Duluth once at the Lyceum Theatre. He was on the stage and I was the audience.

"Yes; how are you?" he responded promptly, and so I told him my name.

Then he excused himself before wandering away to shake hands with a newly-arrived automobile, promising to return in a few minutes to be decently interviewed. I hope he returned.

I could take a trip to Two Harbors and write a verbal interview with Elbert, and here I had All East Aurora to analyze.

So I did not wait to ask him his favorite flower and whether it was hard to write and did he believe in heaven. I went on about his Business.



Besides I get along better with Jumbo, Elbert's Private Secretary.

Hubbard himself has written so many things which I have always thot that he feels just the least bit guilty in my presence. Which casts constraint into the conversation.

Jumbo is guiltless in this matter, and nobody worships *him*. So I can talk to him without feeling a need to do Webster and Confucius into every paragraph.

Jumbo was gentle with me and kind.

He got me a guide out of the chapel and bade me farewell.

And right away I got in wrong with my guide by going into the Printshop smoking the calabash I bot from that cigar-man in the St. Charles at New Orleans.

"'Tis against the Rules to smoke!" ses she, sharp like.

"Very well" ses I "I'll go outside again—God doesn't object!"

And to think I used that on a guide when I might have flung it at the Fra's self!

If there is one thing under high heaven for which the Sage has no particular need it is a Smoker—cigarettist preferred.

List unto what he says of such:—

"He is a defective—a physical, mental and moral defective.

"Bluff is his chief characteristic.

"He tries to make an impression—he talks big, is full of promises, plans and confidential utterances.

"He confuses dates, times and places, and often will tell you he has

done a thing when he only intends to do it.

"—invariably he makes a great discovery: It is that cleverness, astuteness, trickery and untruth are good substitutes for simplicity, frankness and plain, common honesty.

"—he is an irresponsible being —a defective.

"Love him if you can; pity him if you will, but give him no chance to clutch you with his nicotine fingers and drag you beneath the wave."

Wow!

And again, Wow!

But in the same rack with the pamphlet from which these appendices have been amputated is an orange-and-black card bearing this sublime and lofty sentiment:

"There is no Freedom on Earth or in Any Star for those who deny Freedom to Others.—Elbert Hubbard."

So you can take your pick.

I shovelled them both in and showed them to the girl-at-the-desk who saw no connection whatever.

Perhaps there is none.

In any event, it is a brutal thing to bounce on what a man says about the Gentle Vice he hasn't got.

In the nature of things he is bound to bring a rising inflection into the conversation, just to accent his own virtue.

Besides, Elbert tried to bounce a baseball offen my cherished calabash, and this naturally made me bitter.

I sneaked back into the Shops later, after concealing my pipe under the pedestal of Michael Angelo.

This being Saturday, I lookt forward to something exceedingly aesthetic in the way of entertainment during the evening.

Judge of my horrified disappointment then, when they danced the Terrible Tango all over the peristyle until ten p. x. or later!

This might be all right in Buckingham Palace or the Vatican, but it's not what one would expect in the residence of a perfectly respectable Prophet.

And the very next day was Sunday, too!

Now a Roycroft Sunday is a day of perfect rest.

Starting at about seven a. x. with a round of passing the medicine-ball (a reprehensible reptile of the natural order of Stufftis Soccerballis) we passed painfully into a pick-up game of baseball.

This continued until the hour of worship.

Then the baseballers (who are the worshippers) and the Fra (who is the worshipped) passed into the Roycroft Music Room, an appendix to the Inn.

This Music Room was designed by Alice Hubbard and frescoed by Alec Fournier; it is the central shrine of Roycroftdom.

A dim light seeps thru the grass shades and falls across the Fra turning him into an aged Indian philosopher; what with his sunburnt dome and the dark screen of tooled leather behind him.

There be two Steinway Grands here, upon the older of which Lillian Hawley makes marvellous music after Elbert has expounded his text.

This was a sonnet by Michael Angelo on the Sunday of my visit, and after the last chord had floated out under the elms, he went on with Michael, his habits and predelictions, explaining also how he (Michael) happened to get his face pushed in by an envious contemporary.

Then more of Lillian's music (and if she had persevered all day she would have had at least an audience of one!) after which, dinner.

Dinner over, the Fra and his followers (including this Scribe) set forth on a fourteen mile ramble over the Roycroft realm and beyond.

The scenery would have been better appreciated had it not been erected on edge.

As it was, I, at least, was far too busy looking for places to light (and dodging slabs splashed into a slate-bottomed stream by the playful Jumbo) to give my Soul much chance to get out and take the atmosphere.

Returning thru the village, we were greeted on all sides by the Plebians.

The Plutes, on the other hand, cast their eyes beyond us as tho we

■ ■ *Concluded on Page 250.* ■ ■

The DOPE on LYCURGUS

Done into UNITED STATES for "STEAM MACHINERY"

by S. MacHinery

(Continued from the July Issue)

Being now free to devote his attention once more to the regulation of the feeding of his people, Lysurgy fixed it so that never more than fifteen of them should eat at one cafe' at the same time. Each of the fifteen was obliged to bring in his fair share of the menu which generally consisted of bread, bug juice, cheese and figs with an occasional fish or chunk of pig-meat.

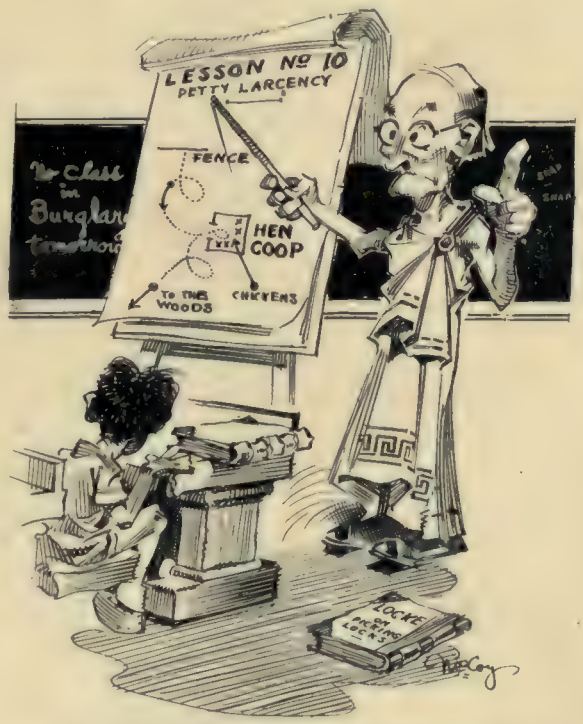
The public eat-fest was firmly insisted on in order to make for the get-together spirit—in fact on one occasion when a certain king-person, after having wiped-up the Athenians in a little free-for-all, sent for his allowance in order to hog it alone with his queen, he was turned down in a very joyous manner by the pole-marchs (Ancestors of Cook and Peary.) Becoming peeved at this and expressing his peevishness by refusing to go to church next day he was promptly hauled up before the district judge and given the option.

Lysurgy allowed a certain amount of free-will on the part of his constituents to the extent of allowing them to black-ball applicants for admission into any one particular fifteen-club. One blackball was counted as a knock-out.

Owing to the failure of Edison to get himself born about that time, Lysurgy decided to make the folks go to bed in the dark, thus economizing on candles and fire insurance and completely squelching the fable of the Yama Yama man, which was quite prevalent before.

None of Lysurgy's little stunts were ever allowed to get into the papers, Lysurgy not holding with the more modern idea that "a good name is more to be desired in great letters." In fact, to protect himself from the special correspondents, he passed a bill making it a criminal offense to record any of his laws any where else than in the think-factory.

Another of his laws was to the effect that all houses should be carefully ornamented with an axe, instead of with paints and wall-papers as had been customary. As none of the Lacedaemonians were any great shakes as lumber-jacks, this was



The Next Important Study Appears to Have Been Thievery.

equivalent to ordering that they should keep their houses Perfectly Plain, with a strong downward inflection on the "Plain."

Being approached about this time by a suffragette who demanded to know where he stood on the question of equal rights for women, Lysurgy was brought to see the error of his ways, and gave the women permission to wrestle, race, shoot, play quoits and to follow the masculine custom of forgetting to dress when they got up in the morning. The women promptly adopted all of these pastimes with equal fervor.

In numerous other ways, also, old bachelors were discouraged. Not only were they treated to considerable back-talk from the younger generation, but they were excluded from the public processions in which the youths and maidens strolled along placidly in the "all-together." In marriage, the modern custom was reversed, the man carrying off his bride by force.

Not satisfied with having regulated the fear of Lysurgy into every adult in the country, he started in on the newly-born children, arranging that all mothers should submit such to a competent (Male) tribunal, whose duty it was to determine whether they should be allowed to go west and grow up with the the country, or be gently but firmly dissuaded from continuing. If they did not appear to be all-wool and at least thirty-five inches wide the dissuading method was used.

The favorite method of dissuasion was a large but very blunt axe, and was found to get quite excellent results.

Even after they had passed muster, the children did not become the property of their lawful parents, but were taken over by the state to be "Instructed." Judging from all accounts, this instruction process was a very painful one and much to be shunned.

The principle study was physical culture, which they carried to extreme lengths, not even allowing the children to wash themselves too frequently for fear of getting their skins soft.

In the summer time they slept on rushes by the riverside, without any covering. In the winter time they were allowed to mix a little thistle-down with the rushes as a special treat.

Made Little Hen Tracks on the Back of an Old Envelope, Varying in Length According to the Strength of the Joy-yell.

The next important study appears to have been thievery. This was reduced to a fine art by the Lacedaemonians, who never punished theft itself but were particularly severe on those who were foolish enough to be found out. It is reported that one youth, having stolen a fox (he must have been an idiot to have wanted one) suffered it to rip him up the front rather than let loose when trying to smuggle it down Main Street.

Another of Lysurgy's little inventions for the suppression of peevishness in youth, was the well-known spanking parties, usually conducted at the foot of the altar of Diana. These spanking-parties were not to get even with the kids for any past act of wrong doing, but to teach them to take their medicine and also, perhaps, a little after the system of the old Irishman who, feeling mad one evening, took his son Pat out to the wood shed and chastised him. On his young hopeful's protesting bitterly that he "hadn't done anything" the old Irishman replied, "No, durn ye, but ye will!"

Having carefully taught the young idea how to shoot, his next care was to prevent them from transferring their knowledge to some other nation who might make use of it in a manner unprovided for in the constitution. So he introduced another bill to discourage the people from going to war too often or too long with the same enemy for fear they should get wise to the special hooks and short jabs of the Lacedaemonians. Besides it was much better fun to clean up one enemy entirely and have a perfectly new and fresh one to start on next.

The severity of the treatment of youth was considerably relaxed when a scrap was expected.

On such occasions the young men were even allowed the luxury of a bath and to comb their hair. The practice in war was to allow the other fellow to yell "enough" when they had socked it to him good and hard, holding that the common custom of chewing an enemy into little pieces after he was defeated was brutal and uncouth. Besides it made the enemy more ready to cry "enough" when he knew that he would be let off if he did.

Even after passing into the Age of Manhood, the Lacedaemonians were not allowed to get too darned free with the personal liberty proposition. All their actions were carefully outlined for them by the state—which was Lysurgy.

They were compelled to keep up their physical culture, and this was not such a bad thing for them, as, in order to give them lots of time to do it in, arrangements were made with the Helots to do all the manual labor of the nation.

The senate was made up of Lysurgy's chief aiders and advisers, vacancies being filled up from among the most deserving men past sixty years of age, since Lysurgy believed that a man could be neither thoroughly wise or provenly good till he had passed that age. From which we conclude that Lysurgy himself was about seventy at that time.

The method of election adopted by Lysurgy was novel to say the least and might well be adopted instead of the "secret" ballot.

A number of chosen election judges were carefully locked up where they couldn't be "Got At" and the names of the candidates were then read to the people. Loud yells of joy greeted the announcement of each man's name, and the judges, who could not hear the men's names, but only the yells of joy, made little hen-tracks on the back of an old evelope varying in length according to the strength of the joy-yell. The man who got the biggest yell got the job. Transferred to our times this method would give employment to many college noise-athletes who otherwise spend most of their time out of a job and not looking for one.

Having regulated the funerals of his people and not finding anything more in their livings that he COULD regulate, Lysurgy decided that life held nothing more for him and therefore permanently quit eating. A short course of this qualified him as the chief character at one of his own-style funerals. However, before permanently ceasing to Lysurge, he had succeeded in making the Spartans the greatest, hardiest and most warlike race on the surface of the earth (In their own minds, which was all that was ever necessary for ordinary purposes) in addition to having enacted a number of laws almost good enough to be included in the Rules and Regulations of the United States without any alteration. Which last proves that he was Some Statesman. After his Unfortunate Demise, his system pined along without him for about five hundred years, to perish finally from general cussedness and the Peversity of Human Nature.

HOW IT HAPPENED

My face has never made me proud,
  Because—so I suppose—
Some angel dropped me on a cloud
  And bust my little nose:
Then, scared at doing such a thing
  Before the Throne of Grace,
He tripped upon his starboard wing
  And stepped upon my face.
He grabbed my eastern ear, in fright,
  And tried to pick me up:—
THAT'S why my face has been a fright
  Since I was just a pup!

—S. MacHinery.

HOW BIG MEN LOG LITTLE MILLS

BEING A LETTER To S. MacHINERY From P. J. Spafford.

IN compliance with your "Our Editorial Needs" will say that since Vol. 1 No. 1 I have been an interested reader of your Steam Machinery and have enjoyed every number.

Having been a logger for the last 14 years your articles along that line have been both interesting and instructive.

The only fault that I can find with your numerous articles on logging methods is that of sameness,—the big fellow with his big operations have hogged the field and us little fellows have been ignored. True, individually the small factors do not count for so very much, but "like the sands on the shore "collectively I think you will find that our output exceeds the big fellows by a good margin. Consequently I feel that we should get, if not our equitable share of publicity, at least a consolation notice.

For about three years I have had charge of the Logging Department for Clear Creek Lbr. Company at Reeves, La., which is on the Frisco about 115 miles west of Baton Rouge and is in the Calcasieu long leaf pine district. I will try to tell you what a little hard work, close figuring and a three drum Clyde machine will do for a fifty thousand capacity mill.

Our timber is about 90% cut over, running from 4 to 12M per acre, occasionally a little better but not often.

For years through this section the choicest trees have been cut out and run down Calcasieu River to the mills at Lake Charles, La. Consequently when we do find a strip of virgin timber it is in some almost inaccessable spot and we are generally glad when we get the skidder out of such places.

For our Skidder we used a three drum Clyde machine, with 10"x10" engines and a 210-2" tube boiler. These were placed upon a home made heart pine frame, 14'x40' with 42' round, pealed and dried boom poles measuring 18" at the large end and fitted with Clyde malleable

Spafford's Three Drum Clyde.

HEISLER
Geared Locomotives

Are especially adapted for heavy hauling on steep grades, sharp curves and uneven tracks. For logging, switching and pulling on main lines, mills, furnaces and industrial purposes.

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Heisler Locomotive Works

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One of the largest lumber companies in the country writes us: "We do not see how any up-to-date concern could afford to be without it."

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NEWTON BUILDING

ST. PAUL, MINN.

boom top. Stationary legs made with two 12"-x 12' 6' were bolted to each corner and the center of the frame so that the whole can be jacked up and blocked in such a manner as to allow the passage of empty cars through in under the whole machine and the first car left spotted under the booms ready to receive its load.

The two rear drums are used for skidding and the front one for loading. The car spotting is done with a winch head attached to the shaft of the loading drum, the spotting line leading thru a block fastened to the front sill of the skidder frame and back over the top of the empty cars, which are under the skidder. For this we use the best part of our old skidding lines.

We use 700' of 5/8 cable on each skidding drum, which enables us to reach all long corners but seldom ever skid over 450', finding a greater distance too slow and too hard on the horses.

In ordinary timber we figure our sets so that one setting will last all day, but in scattered timber will frequently have to move often, which I find pays better than long skidding. It takes about 45 minutes to move.

We use two 20 ton roller bearing screw jacks to move but I believe the Triplex Notch Jack would be better. With this rig I have, when the timber was fair, skidded and loaded for as low as 55c per M and where the timber was bad and logs small it has run up to 77c per M. These figures are based on a month's work, for we have for a single day skidded and loaded for as low as 24c.

By cutting as much as possible the back pulls and taking the proper care of our cables they will pull from 7 to 9 million feet.

We use two engines, one a 50 ton Baldwin that handles the log cars and a 22 ton Glover that is used by the steel gang.

We use 35 lb. steel, and as near as possible a 6"x8"x8' tie, either hewn or sawn, laying from 12 to 14 ties on branches and from 14 up on main lines. The choicest ties are reserved for main line use.

Our steel gang is composed of 9 men and are worked strictly on a task or piece work basis. They are paid $1.75 per day and have to handle ten rails per man or no day that is five rails up and five down or when they rip all day it is twelve rails up and when they lay all day it is eight rails down. This makes our railroad cost us 35c per 30' of track layed.

These tasks can be easily accomplished by not allowing too much time to be wasted handling the ties; that is, where the largest part of the time is consumed in track construction.

Here a tie is never too large for one man to handle. In ripping track each man picks up and brings to the car his own tie, where two men boost it into its place.

When laying track, two men at the car unload ties to the track layers, each track layer handling one tie. Thus at the car is the only place we allow two men to handle the same tie.

The foreman runs his own engine and by calling the men back over faulty work done while

The Trade Paper.
"I know hundreds of high, prosperous business men, manufacturers, dealers, jobbers, craftsmen, and I can not recall a single instance in which the mentally successful man does not read his special trade paper. He subscribes for it and he pays for it promptly. In many instances he orders extra copies from time to time and distributes them. He is boosting the whole game all along the line and this very fact puts him in a frame of mind where current of success come swirling in his own direction. He is moving on the eternal tide of progress. "When you subscribe for your trade paper and by assimilate it, you are uplifted, inspired, given courage, pep, intellectual vim and vigor and enough trade information to make you free from the trials and tribulations which beset the man who doesn't know.
"These things all have a direct influence on the bank and mental balance.
"The trade paper binds everybody in the business into a fraternity which spells length of days, because it 'serves' and its service is based on specific knowledge."—Elbert Hubbard.
Fighting Ma
her Camp
The LUMBERMAN
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FLINT-RIM
SPROCKET WHEELS
Heavy-Duty Chains
Link-Belt Company
DIAMOND IRON WORKS
Saw Mill Machinery
Dry Press Brick Machinery
HIGH GRADE BUILDING BRICK
The Fernholz Brick Machinery Co.
REX
MORE-JONES BRASS & METAL CO
Portable Cross Tie Mills
Portable Saw Mills
Standard Portable Saw Mills Co.
BEARINGS
EXTRA QUALITY FOR YOU
"MAJESTIC"
— GUARANTEED —
METAL
B. J. DOWD KNIFE WORKS

You Can Get Along Without it, But—

YOU'LL HAVE A FEELING THAT you are missing something.

The LUMBER INDUSTRY, statistics show, is the world's greatest industry. To keep yourself posted on all its happenings by word of mouth is unsatisfactory and incomplete.

There are thousands of men in every branch of the industry who realize that to profit most they must not only get ALL the lumber news, but ALL the lumber ideas and articles they can of a helpful nature. These same thousands realize, too, that they can get this valuable information, and the spirit it conveys, ONLY through the journal devoted to their trade. So to try to get it any other way is bound to leave a feeling that you have missed something.

In keeping with the industry it represents, the ST. LOUIS LUMBERMAN is a big, many paged journal that has between its covers every issue, articles, pictures, stories, reports, and a hundred and more things interesting and valuable to every member of the lumber industry.

Yet as valuable as it is to men who want to know MORE about the lumber business, and reap the returns that knowing more brings, one can get along and probably win success without the ST. LOUIS LUMBERMAN coming to him every two weeks, but he will always be troubled by that "missed something" feeling.

Send for a free sample copy to-day and note the character of the things you have been missing.

$2.00 will bring you the 24 issues for one year.

The LUMBERMAN
ST. LOUIS

LUMBERMEN'S BUILDING, ST. LOUIS, MO.

DO YOU OWN A TREE?

Do YOU know what it is, how to care for it, what it is worth and what to do for it whether you own one tree or thousands of them?

The American Forestry Association, a public-service, non-commercial organization, working for the benefit of tree lovers and tree owners, desires to send you some literature about trees,—you will find it valuable.

Send your name and address and specify whether you have a few shade trees, a woodlot, a well wooded country estate, some timberland, or whether you just love trees.

American Forestry Association

Washington,
D. C.

he is absent looking after the engine they have learned that it pays to do their work correctly as they go.

In virgin timber and a less rugged country this style of rig and method of track laying could get much better and cheaper results. In places along the Calcasieu River swamps we have had some pretty hard skidding, breaking out big loblolly logs with a thick undergrowth all around them and the skidder setting back out on the high ground, but have always found one machine equal to the occasion and after about five years of hard usage the machinery is still in A1 condition and our repair bills have been extremely small. However will say that when a nut needed to be tightened we tightened it and did not wait until noon or night or "after a while" or anything else. That is the only way to keep a good machine good.

Now if anyone is logging a small mill cheaper than we are would be glad to find out how and if not you are cordially invited to come over before you relegate me to the Ananias Club.

P. J. STAFFORD.

—THE END.—

A LITTLE JOURNEY To The Home Of ELBERT HUBBARD.

■ *Continued from page 242.* ■

■

were not quite respectable. Quite aside from the fact that we had that Fearful Fra with us, I am inclined to think we wern't.

However we got back to the Inn in time for supper, which was the main thing.

That evening, the Fra made his great error of judgment.

He talked on Advertising.

Now what Hubbard does not know about Applied Advertising is unworthy of serious consideration.

But what he says about Advertising generally is ditto and likewise.

Perhaps this is because he doesn't want to create unnecessary competition: I know not. However, his talk was worth the price of admission at least and Lillian Hawley was there with her Steinway Grand which alone was well worth the time.

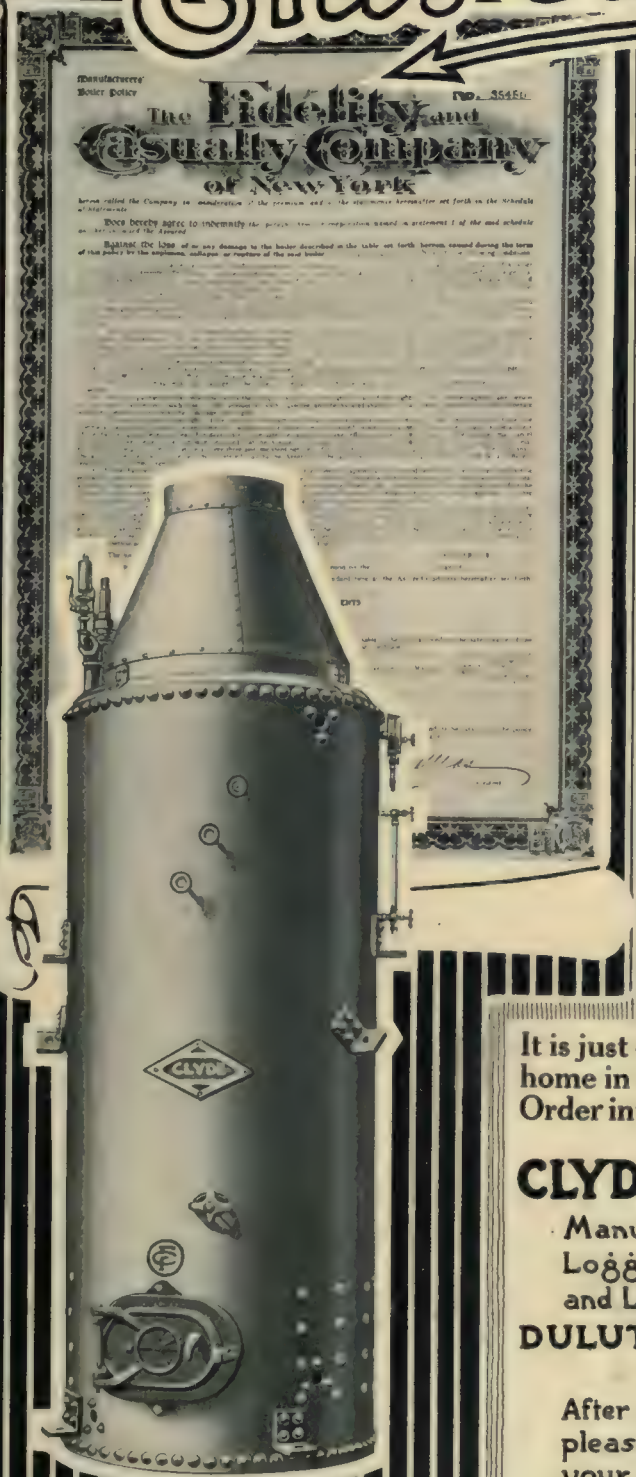
Then to bed, in among the stench of sandalwood, and the Roycroft Restday was done with for another week.

Personally I think they overdo this rest-thing. They are too strenuous about it. If I were to rest that way right along I know it would not be long before my relatives would spend part of my insurance on a tasteful tombstone.

Fortunately the next day was Monday and we didn't have to rest.

Elbert was industriously invisible, and so I

This GUARANTEE



STANDS BEHIND EVERY BOILER OF CLYDE GRADE

The best boiler-insurance we know of is the use of first-class materials by highly-skilled men in making the boiler.

And this form of insurance has always gone with every boiler of Clyde-Grade. Read page eleven of our Big Red Catalog! But there is a certain satisfaction in knowing that the boiler inspectors of a great insurance company will carefully check every boiler before it leaves the plant and guarantee it to be perfect, backing their guarantee with five hundred dollars of their company's money. A certificate of this inspection with this guarantee behind it, now accompanies every boiler you buy from us.

It is just one more service-rivet driven home in our plan of Building a Repeat Order into Everything of Clyde-Grade.

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Manufacturers of Clyde Grade
Logging, Hoisting, Excavating
and Land-Clearing Machinery at
DULUTH, MINNESOTA, U.S.A.

After you have read the above, please insert it at PAGE 12 in your copy of our Big Catalog
CLYDE HOISTING MACHINERY

"There's No Place Like Home"—Pages 34-35.

American Lumberman

THE TIMBERMAN

CHICAGO MAY 11 1918

A SELF-MADE CANADIAN

READ IT, because—

You get it *every week.*

It will keep you posted on markets, *every week.*

It will give you the news of the entire lumber world, *every week.*

It contains dependable and authoritative editorial comment and opinions on matters of interest to the lumber trade *every week.*

Its many departments and special articles provide a veritable compendium of instructive, informing and entertaining lumber miscellany, *every week.*

Its able staff of editors, reporters and correspondents, and its exceptional news gathering facilities enable it *every week* to present such a comprehensive and dependable review of all matters pertaining to the lumber trade as to have earned the title of "World's Greatest Lumber Paper".

ADVERTISE IN IT, because—

It reaches practically ALL the trade.

Its advertising pages are considered the leading directory or guide to "Where to Buy".

It will give you MORE circulation than any two other lumber papers combined.

It will give you BETTER circulation. The average credit rating of its subscribers exceeds $100,000 each.

You will get inquiries from firms who will make the most desirable customers, many of whom could not be reached through other media.

Its thousands of readers BUY it and pay $4.00 a year for it IN ADVANCE, thus guaranteeing a bona fide circulation among people who want the best and have the means to pay for it.

Ask for sample copy and further particulars.

American Lumberman

World's Greatest Lumber Paper

CHICAGO

sought my guide of a preceding paragraph and did the Shops.

Now the Roycroft Shops are done after the Old English plan in architecture, which is mainly a matter of Angles.

There are two shops, a bank building, a power-house and a chapel, in addition to the Inn.

The chapel is where they prey on the public and take up a collection from the wandering and wondering worshippers.

We who have banal minds would call it the only genuine shop about the place, for it is here they expose the finished works for sale.

The two alleged shops are real specimens of the almost-extinct "manufactory" where things are made with hands instead of machines.

Wonderfully beautiful works they turn out, these disciples of the Fra!

Nor Florence, nor Venice, nor France in her most luxurious time could produce book-binding more satisfyingly and completely perfect than this they do at East Aurora.

It is as perfect as a perfect picture or a splendid piece of sculpture.

It has that rare beauty of work done for the joy of working well. The supreme reward of splendid service, this, that your work may be beautiful because of its perfection and in spite of its kind.

But everything the Roycrofters make partakes of this quality according to degree.

Even the youngest apprentice of them all can make a poem out of a penwiper and a sonata from a coil of copper wire.

The secret is no secret, but a Law set to work.

These people are working at the things they love for those they love.

They are not driven to their tasks like slaves and forced to work thru certain fixt hours whether or no they are in condition to work well. There are no whitewashed walls and opaque windows at Roycrofton.

The Roycrofters are a great family of fellow-craftsmen, brot together to serve those many people who still prefer a few beautifully perfect possessions to a great many banal or imperfect things.

They are surrounded by beautiful things; they come and go as they like.

The only Rule in Roycrofton might paraphrase Nelson's message before Trafalgar thus:—

"Elbert expects that every man each day will do his best"—and that goes for the girls too!

So each strives only to express the most beautiful side of his or her nature, and cannot help but succeed since there are no by-paths to failure.

And the guiding, harmonizing spirit behind these three hundred fifty fellow-crafters is the spirit of Elbert Hubbard and his gudewife Alice.

They have made the cult of beauty a commercial certainty; they have placed the tools to self-expression in the hands of hundreds and have scattered inspiration, in words and things, from continent to continent, from coast to coast.

Without them there would be no Roycrofters.

After them:—but why fuss about the future?

American Forest Trees

"Written in the Lumberman's Language"

¶ It tells all there is to know about every commercial tree in the United States, and

¶ You can rely absolutely upon its technical correctness in every detail.

¶ We have left a few hundred copies of this beautifully bound edition after a very satisfactory sale and

¶ Can make quick shipment on ten days' trial upon receipt of your order.

PRICE, PREPAID, SIX DOLLARS.

Hardwood Record

537 South Dearborn Street

Chicago, Illinois

A postal or letter giving your address will bring you specification blanks which will be of use in sending inquiries for springs.

Locomotive Gears

OF "STAG" Manganese Steel will average at least six times the life of ordinary steel. They are tough and strong and stubbornly resist wear.

Are guaranteed to be economical.

If you have dimensions of your gears write us. If not buy through the locomotive manufacturer and specify our steel.

Edgar Allen American Manganese Steel Co.

Chicago, Ill. Chicago Heights, Ill.
New Castle, Dela.

A 75 per cent Saving in Lubrication

SHAFTENE

Save money, time, machinery and labor. Sent on 30 days trial, no charge for amount used if SHAFTENE fails to solve your lubricating problems. Ask for list of satisfied users. Manufactured and sold ONLY by

THE TROPICAL OIL CO.
CLEVELAND, OHIO

None-the-less I think there will be no Elisha to receive the mantle of Elbert.

He has too healthy an ego.

—It is a shrewd guess that he will leave instructions to cremate the mantle with the bones; and then we will have nothing but Rex Beach, Jack London or a reincarnated Phillips upon which to look forward.

But nature will take care of us in the matter of Writers and we can only pray that heaven will protect the remaining Roycrofters. Which heaven will probably do, since she (or It) has a fondness for folk who do good work.

Nor is there immediate need for anxiety.

The Fra is yet in the prime of life and will continue to fraternalize with the immortals for many more moons before deciding to join them.

In the meantime, Little Journeys, Fras and Philistines will continue to flow from the point of his prolific pen, until One comes under the Roycroft elms, bringing to him his final copy of the Essay on Silence.

—THE END—

WAR

The sunlight; and the wildly-cheering throngs;
The dusty way;
The war-drums, throbbing to the battle-songs
The fifers play.
The flying flags; the rushing feet; the crash
Of steel on steel;
The roar of distant thunders, and the flash;
The su ge and reel.

The night-time and the rain; the silent dead
Striving no more;
The lazy vultures flapping overhead:
This, then, is War!

C. HENRY.

Buying Lumber

Then you want to know all about western prices for fir, redwood, spruce, sugar and white pine, redwood and cedar shingles!

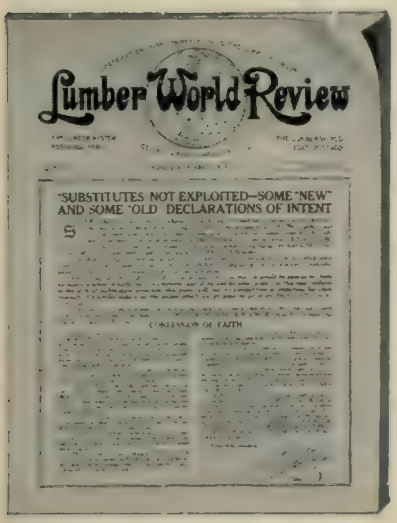
SUBSCRIBE FOR AND READ

PIONEER
Western Lumberman

$2.00 per year
Published twice-a-month

311 California St.
SAN FRANCISCO

"Experience With A Cable Tram Road"



WOULD you like to know the experience some men have had with a cable tram road?

It is always interesting to know how the "other fellow" does things. Even if we don't always agree with him we get some idea that may mean many dollars to us.

In our December 10, 1913, issue we published a practical discussion of one man's experience with a cable tram road.

The LUMBER WORLD REVIEW publishes practical ideas, plans, etc. in every issue. The methods used by the *other fellow* to make his success are full of ideas for YOU.

Read the LUMBER WORLD REVIEW and get the "other fellow's" viewpoint.

A postal card request will bring a sample copy to you FREE by return mail. Send for YOUR COPY TODAY.

LUMBER WORLD REVIEW

SUITE 1740 TRANSPORTATION BUILDING

CHICAGO, ILL.

THE selling-power of your Advertisement can never be greater than its *pulling power!*—Because people have got to *read* it before they can want what you advertise and they won't read it unless it *commands* their attention. How can you command attention to your ad?—Remember that *nothing pulls like a picture. Put a "cut" in your copy instead of in your price.* It costs less, produces more!—Let us picture your product so that your prospects may see for themselves! . . . . . .

Duluth Photo-Engraving Company

ARTISTS ENGRAVERS
COMMERCIAL PHOTOGRAPHERS ELECTROTYPERS

Duluth, Minnesota

Stewart Service

THE successful printer of today must do more than deal in paper, ink and presswork combined to form printed matter.

He must also be prepared to offer his customer mechanical suggestions founded upon experience, and *plan-Service* founded upon specialized skill.

He must see his product in its true relation to *a successful advertising campaign* and not just as a "job."

And he must be able, as well as willing, to grasp the entire campaign with and for his customer, seeing that no loophole is left thru which may slip the ultimate dollar of possible profit.

Even when the customer is a trained advertising man, he will often be able to correct oversight, or suggest economies and improvements in mechanical handling.

And when the customer has paid no special attention to the science of suggestion or to the art of design, he will be able to render service of indispensable value.

—These then are the functions of STEWART SERVICE. Actually we are "Dealers in *Direct Publicity*" for we believe that the more nearly we can make our printing "publicity-perfect" the better salesman it will be for itself. If we can make our printing sell goods for you, it will doubtless sell you more of our printing. Hence we offer you Stewart Service in Direct Publicity, which is our idea of salesmanship.

Write for our booklet on "Direct Publicity"

M. I. STEWART COMPANY

A RELIABLE SOURCE OF
SALESMANSHIP IN PRINT

DULUTH:—"Great Port of the
Northwest."

. Vol. 2. No. 9.

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A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

FOR THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER

CLYDE CONVENTION CLUTTERING THE CONCRETE STEPS OF THE CLYDE OFFICE.

A Monthly Magazine of Men, Machinery & Methods

Charles H. Mackintosh Managing Editor

Our Covenant with Our Readers

We absolutely and unconditionally guarantee never to publish in our columns advertising matter of a fraudulent or misleading nature, nor to accept copy from any firm whatsoever until we are satisfied beyond all possibility of reasonable doubt that such firm is in a position to live up to the letter of its proposals and has done so consistently in the past. This we do, not because we are better or more moral than other magazines of our day, but because we conceive the true purpose of a magazine to be service to its readers, and we would serve well in order that we may be well served.

STEAM MACHINERY PUBLISHING COMPANY

SUBSCRIPTION RATES:

One Dollar a year to any part of the United States. One Dollar and Fifty Cents to Canada and foreign countries.

ADVERTISING RATES:

Rates for advertising in the columns of STEAM MACHINERY, together with a detailed description of the *quality* and *quantity* of circulation, will be sent promptly upon request.

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OUR EDITORIAL NEEDS.

"STEAM MACHINERY" wants and is willing to pay for the co-operation of its readers in editorial and reportorial work.

We want to keep abreast of conditions in all departments of the logging world; giving our readers the first news and the true news about labor saving methods in their respective fields.

We want to know what the men behind the machines are doing to cut costs and increase efficiency in getting logs, laying and lifting track, caring for their machines and so forth.

We believe it will profit the men who are doing things to let us publish the evidence of their efficiency; we know it will benefit the industry as a whole to read reports which will have a tendency to increase practical knowledge and kindle ambition.

We know that the man who has these facts is not usually a writer, but we have plenty of pen-pushers who will attend to dressing up such articles for publication.

We want and will pay for the *facts* without caring a cuss about the form they come in, just so our not-very-intelligent reporters can get the point plainly and work it into perfectly pleasing paragraphs for the printing press.

We will pay according to the value of the idea, such value to be judged by the amount of space our editorial staff finds it worthy to occupy, at five dollars the full three column page of ten point type, excluding illustrations, for which we will pay one dollar apiece.

THE PUBLISHERS.

The Editor Thinks

IT HAS just struck midnight, here in America. ¶ But the dawn is breaking over Europe, and the reveille is ringing out over a thousand camps. ¶ How eagerly the sun will thrust his flaming fingers thru the mists this morning, clutching at clouds that he may sooner mount above the horizon! ¶ How many thousand times has he risen to see milkmaids swinging their pails along the paths to the meadows and mop-headed farm hands knuckling their eyes on the way to work. ¶ But this morning he will see a world at war. ¶ He will see great auto-trucks moaning down every road, burdened with bread—and potential Death. ¶ He will see scores of great grey shapes hissing thru the waters of the Channel and the North Sea, narrowing down the distance between yesterday's Hope and to-day's Chaos. ¶ London and Paris, Berlin and Vienna:—He will look over the housetops into these, and his beams will fall on pale faces instead of on paving stones. ¶ But not all will be pale—many will be flushed with War and Wine—only the women's faces will be anxious, sad or despairing. ¶ He will flash thru the windows of a dozen palaces and bring a moment's pause in the cabinet meetings of every Power in Europe. ¶ And the Armies in the Field: he will see them, ten millions strong, flowing from their encampments like molten metal. ¶ He is ushering in a wonderful and a terrible day with this sunrise of August third. ¶ A day which shall nevermore be erased from the memory of man; which shall live long after its dead have become simply the fallen forces of this Czar, this Kaiser, this Emperor, or that King. ¶ For it is the privilege of the dead that die in War to be forgotten:—they are so many, and the times are too big for them. ¶ But listen!—There are churchbells chiming out all over the world, calling the people to prayer. ¶ —Prayer for what? ¶ For an impossible Peace, or for the mercy of a compassionate God? ¶ No, for Victory! ¶ They are falling on their knees before the altar of Love and begging God to give them the blood of their brothers across the border. ¶ All the nations are asking this, each for itself, and all are asking it of the same God! ¶ The Kaiser has asked his people to pray for the armies of Germany, that they may slay more than are slain of them. ¶ The Church has blessed the arms of Russia and has sent a sacred Ikon to the Servians in the field. ¶ All over the world men are becoming confused in their theology and are bespeaking the blessing of the Most High on their particular brand of fratricide. ¶ The Lord of Love has become the Lord of Hosts; and followers of his son, the Prince of Peace, bow down before the God of Battles. ¶ Here is a most hideous confusion in terms surely, for all these good misguided people conceive the same idea from all these names. ¶ That same God who so loved the world that he sent his son to lead it to Peace and Rest and Brotherliness is now asked to lend his supernatural aid in the aiming of cannon and to the thrusting of swords into the hearts of his creatures. ¶ He is asked to assume the

greed of self-blinded bigots as "His Most Holy Cause" and to send his spirit into the hearts of the common people (whom Lincoln tells us he must love most or he would not have made so many of them) that they may be willing to bear the bloody brunt of a quarrel which is not their own. ¶ Here and there, it is true, men still pray to their former Concept, crying for Peace. ¶ But he who breaks his sword and burns his battleships offers up the only effective prayer for Peace. ¶ There is no virtue in words until they have been done into deeds, and there can be no Peace while the nations pray for it with their lips and pile up the means to murder with their hands. ¶ What a hellish mockery it is, this mixing up of religion and war! ¶ Religion must always stand for love and unselfishness, for purity and clean deeds, for brave hearts and noble ideals or it is no true religion but a vice. ¶ And War can never stand for anything but gaping wounds and the stench of blood, weeping women and starving children, greed and hate and murder-madness. ¶ Let us admit, if we must, that our bestial desires to rend and slay each other sometimes become too strong for our control. ¶ Let us admit that Greed and not God is our chosen leader to the Vulture's future feast. ¶ For we are yet young in well-doing and are kindred to the beasts thru many million years. ¶ But let us not drag the highest of our new ideals and our most cherished concepts into the bloody mire of our passions. ¶ Rather let us pray that all our gods will mercifully forget us until our madness has past. ¶ They may forgive us then, because they know how thin a line lies between us and our devils, but they should not, in common human decency, be asked to lend a hand while we touch a torch to all their teachings and pull their Holy of Holies down about their ears.

ONCE THERE WAS A LITTLE settlement of two dozen people. ¶ Twelve of them owned tracts of land and cultivated each his own tract. ¶ The other twelve were gunmen, one hired by each of the workers to protect him at his work. ¶ If a worker happened to stick his hoe over the edge of another fellow's tract, the other fellow's gunman would shoot him dead on the spot—if he could get the drop on the first fellow's gunman. ¶ Otherwise he and his worker got shot. ¶ The survivor commandeered both tracts. ¶ Now this went on till there were only six of them left to own and work the twelve tracts: —and, of course, six gunmen. ¶ Then one morning, one of the six workers gave birth to a brilliant idea and called a council of the cultivators. ¶ "See here, fellows" he said, "Here we are leading a cat-and-dog life, flying at each others throats for every little squabble and each hiring a big, lazy, goodfor-nothing gunman to protect us from each other—when we have only half enough men to cultivate our crops. ¶ Let's form a Mutual Protective Association, fire all our gunmen, bust all their guns except one, hire five of 'em back as workers and appoint the other Sheriff, giving him the only gun on the grounds. ¶ "Then if any of us get squabbling, let's get together and settle the thing peaceably in the light of plain commonsense. ¶ "If the loser doesn't like our decision—well, we will have our Sheriff to see that he swallows it peaceably. ¶ "—What say?" ¶ The other five thot it over and saw the light. ¶ And it was even as the peaceful person suggested. ¶ —Of course, if you care to, you can substitute nations for the individuals in this fable and

armies and navies for the gunmen and their guns. ¶ It stays just as rational and a durned sight more civilized than the way we settle our national neighborhood squabbles to-day. ¶ Individual savages, dogs, wolves and suchlike still fight their squabbles with clubs and fangs, but Civilized Man takes 'em to court—and his neighbors pay a Sheriff to see that he stands by the decision. But when you get a bunch of Civilized Men together, why *that* makes a Nation, which, of course, is an *entirely* different proposition.—Or is it?—We wonder.

△ ⊢▽ ♂

WE HAVE GOT TO GET money in order to live. ¶ We know that, almost from birth. ¶ All youth long it is hammered into us by our relations and our friends and by the resistless *facts* about us. ¶ And so we begin to think of money as the most important thing in all the world. ¶ Money!—We must have it, or we may come to want, to beg on the streets, to starve! ¶ Money!—It obsesses us, until money and the making of money and always more money becomes the central habit of our lives. ¶ We are creatures of habit anyhow—let us think a thing twice and we have laid the foundation of a habit. Let us think a dozen times and the habit has us firmly in its grip. ¶ But we think of money, not twice, not a dozen times, but hundreds and thousands of times each year. ¶ We build the thought of money into the biggest, the cruelest habit we have, until we can no more escape from it than we can from Death. ¶ It is ourselves: it is our end. ¶ And what is money after all, but the symbol of food and drink and shelter? ¶ When we have enough for this we have enough for all—and no man or woman who spends a life of sincere service to humanity shall ever lack these things. ¶ It is only the lives of selfish service, grasping after opulence or adulation, which end in disaster. ¶ For if a man will truly serve, he will serve in whatever useful capacity Nature may bring to his skill; being useful, the world will have need of him, and men are too selfish to kill the things that serve them sincerely and well. ¶ Service, not money, is the symbol of happiness on earth. ¶ For service begets greater powers to service and greater service means greater happiness. ¶ But tho money begets more money, it never meant greater happiness. The money habit is the strongest of all habits, crushing down all other kindlier habits, and one must have that habit to gain great wealth to-day. ¶ Because the money-maker is in stern and constant competition with countless others whose hearts and minds and souls have become creatures of this habit. ¶ Only their kind can compete with them successfully. ¶ The choice then lies between sufficiency—and Service, which is constantly-growing power to happiness—and Money, which is meat and drink in a cateleptic condition. ¶ You may store up food for the body until you have a million times more than you can ever use. ¶ Or you may store up food for the soul, of which no human being can ever have enough. ¶ And most of us—being fools and the creatures of habit—choose the cold-storage wealth, leaving the supreme joy of splendid service to the few Masters of this simple mystery in life!

△ ⊢▽ ♂

HUMAN NATURE WILL NEVER be perfect; because when it becomes so we will be as gods, knowing good and evil. ¶ These we do not yet know; for absolute knowledge must always equal that Sufficient Reason which we are assured is the dynamic force behind Will. ¶ What Good is

absolutely known is absolutely Willed and what is willed is *done.* ¶ It is necessary then, in our dealings one with another, that we recognize this imperfection inherent in our common nature and make the fullest allowances for it. ¶ We must bear uppermost in our minds the fact that our fellows are not perfect *even as we are not perfect* and that we have no god-given right to pass judgment upon phases of imperfection simply because they are not phases of our imperfection. ¶ That we have never committed a certain sin can most often be credited to our environment rather than to ourselves: but who so humble-hearted as to refuse the credit? ¶ There have been such however. ¶ Take the example of that great philosopher who, watching a criminal pass on the way to retribution, said "There, but for the grace and mercy of God, goes *myself.* ¶ Men must have ideals to stir their souls into wrath against the evils in things as they are. ¶ But these ideals are given them that they may find their end in *personal* purification for Nature always works upon the race thru the individual. ¶ Men are meant to improve their fellows more by example than precept: for words come readily and go lightly, but *deeds* are graven into the granite of eternity. ¶ Because deeds are so lasting and because it takes so great an effort to make them so, we are always more apt to set our ideals working upon the sins of others, rather than upon ourselves. ¶ We cry a crusade against some sin from which our own habits of life have always sheltered us, and strive to force those who have been less fortunate to follow in the footsteps of our untempted virtue. ¶ And yet no man is perfect. ¶ Nowhere, within the confines of the Law of Gravity, have our acute intelligences and marvelous modern instruments of astronomical precision enabled us to find one single created creature without sin! ¶ Then why fly further than our own ego to find a fertile field for reform? ¶ Besides, it is an established impossibility to legislate virtue into any community. ¶ You can frighten or force the unfortunate atavar into step with his times, but you cannot control the moral natures of a mighty minority simply because you sway the vote of a mightier majority. ¶ Men will do Good when they know Good. ¶ They will know it when they see it and find that *it works.* ¶ Then let our aim be to make men good by showing them the Only Way to truest happiness. ¶ Let us love and laugh and labor; learning from our failures and from the shortcomings of others. ¶ And let us cease from censure until we can imply it by our own conduct and not alone in self-righteousness and in self-sufficiency.

△ ⊢▽ ♂

AFTER ALL, THE PHILOSOPHY of optimism is the only philosophy worth while. Whoever believes in the best and works to it cannot but spend a better life and get more joy of it than thru picturing Earth as an ante-room of hell. ¶ Because if it were, it would be our own fault, and no man gains any great growth thru chanting Mea Culpa over his dead sins. ¶ Let us learn from our evils but not live with them:—there is more good than we can grasp even with our hands empty.

△ ⊢▽ ♂

¶ When you begin to feel sorry for yourself you have a right to be, for the sorriest thing in all this world is that man whose soul cries itself to sleep on its own rumpled ego.

△ ⊢▽ ♂

¶ The world needs you or you wouldn't be here, but you would never believe how splendidly she will get along without you.

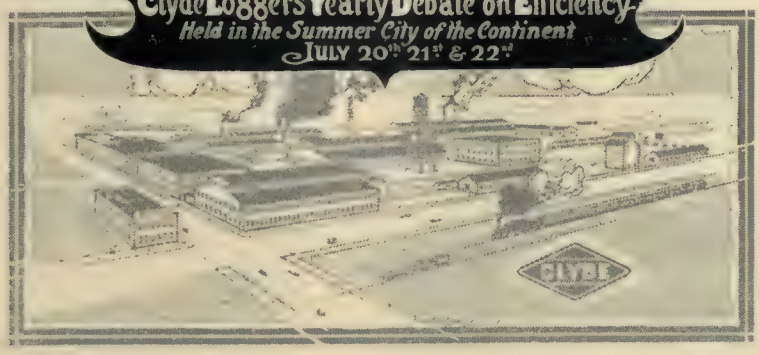
C·A· LUSTER
President

C.L.Y.D.E. in Convention at DULUTH

Clyde Loggers Yearly Debate on Efficiency

Held in the Summer City of the Continent

JULY 20th 21st & 22nd



FOR three or four years past, the logging experts of the Clyde Iron Works have been holding a yearly convention in the home city of their plant, and have been neglecting to give the priceless results of their deliberations to those most concerned—the Loggers!

But S. MacHinery, having concealed himself beneath the rug at two conventions prior to this of nineteen-fourteen, determined to do away with such secrecy for the future.

Day after day, month after month, the whole year thru, these modern missionaries of scientific skidding go marching up and down the logging world preaching and practicing the gospel of greater efficiency.

And then, in the kalends of July, they come together, to compare their experience and to make it the community property of all.

Now, since this experience is the experience of modern loggers with modern machines, it seemed to S. MacHinery that all modern loggers and all loggers about to be metamorphosed into modern loggers would gain somewhat of practical value thru sharing it.

Hence this Digest, done into print and pictures with Caslon and camera by the Scribe and his army of able assistants.

IT HAS long been a trade truism that it is always better and cheaper to buy the best.

But not so many have held that truism up to the mirror of *manufacturing* and glimpsed the reversed reflection that it is better to *make* and cheaper to *sell* the best.

It works out something after this fashion:—

"Bill, what do you think now of that pickle peeler you bot last week at a bargain?"

"Rotten!—The pesky pest petered out on the hundred-twenty-second pickle:—me for a knife hencewardson!"

"Guess I won't buy one, then; and I'll have to warn Jim and George and Tom and Richard and Harry:—they-all were talking about getting pickle peelers for themselves!"

So there you are!—Seven sales switched onto the side-track at Oblivion just because the pickle-peeling manufacturer wanted to cut a few coppers from the selling price of his implement and did it by cutting a million pickles—more or less—offen its capacity.

—To paraphrase a certain famous slogan much used in hardware trade papers: *The recollection of a punk purchase remains—and travels around—long after the cut price is forgotten.*

Wherever the end is a single sale in each community—well it's up to your moral sense.

But where you expect to sell Bill because of (or against) Tom's say so, it's a matter of the commonest kind of common sense to build an ad. into the first and each subsequent sale. Or so it would seem.

Would it not?

Yes, it would—but for Barnum.

Now Barnum gave birth to the present platitude about a sucker being born every minute.

Ever since then there have been heaps of humans who were willing to risk the Single Sale route to Success—waiting for those suckers to be born, grow up and resume sucking.

But there was the hitch.

Barnum was right except in two unimportant particulars.

He read the speed wrongly—it is more liable to be a sucker a second—and he forgot to mention that very very few suckers *stay put*. They grow out of it.

So, by the time they have pance with pockets in which to keep money with which to attract the sucker-seeker, they have unfortunately accumulated sufficient sapience to *keep* said money in said pance-pocket until Friend Sufficientreason comes along. You may sting them once but perhaps not yet, certainly not again—ever.

Hence it is that the path of Single Sales is a short-cut to Business Oblivion, while the road of Repeat Orders is a speedway to Success.

To get a repeat order you must sell Service with the first.

To sell Service you must know your field.

To know your field you must get out into in, glom up chunks of it and stick them under the mental microscope.

You must live with your line and love it, while if your customers object to your living with or loving them you must at least study them—study them from the standard of possible service *from* you and your house.

Then hitch your knowledge of the line and your knowledge of the customers' conditions to your samplecase or catalogs, whip up with industry, and go clattering down the Road of Repeats to Success!

That's the way the Clydists doped it out back in the early days of the Twentieth Century when men were much nearer monera than they now are.

They said to themsleves:

"History repeats herself that *Success is certain where Orders repeat themselves!*"

And they decided to prosecute an irresistable suit against Success by building a repeat-order into every machine found worthy to wear the Clyde diamond.

—How does it dope out after more than a decade of *doing it?*

Read on!

FIRST comes into the Clyde Convention, Harry Schrass, the gigantic but genial German who bosses the Branch in New Orleans, bearing an hysterically historical monograph on "Clyde Logging—Yesterday."

Then Kyle of Houston and Kelley of Savannah with "Clyde Logging—Today."

And then Adams of New England and Meany of the Pacific Coast with "Clyde Logging—Tomorrow."

After which, Chorus by the entire convention: "Clyde Logging—Yesterday, Today and *Forever!*"

"Clyde Logging—Yesterday"

Historical Monograph Done and Delivered at the '14 Clyde Convention by H. J. Schrass.

ELEVEN years ago when I was traveling the states of Arkansas and Louisiana, I met the only representative which the Clyde Iron Works had in the South at that time. I became acquainted with him and found that he was selling the McGiffert Log Loader. The McGiffert Log Loader at that time was just being introduced to the lumber trade in the South and if I remeber correctly the first machine sold West of the river was a narrow gauge McGiffert and was being operated by the Fordyce Lbr. Co., Fordyce, Ark., with fairly good success. In as much as this machine was of an entirely different type of log loader than any that were in use at that time, it created quite a good deal of comment among lumbermen on the Cotton Belt Ry., between Pine Bluff and Texarkana, with the result, that after a period of several months five or six of these machines had been placed in a territory covering possibly fifty miles. It did not take me very long to see that this new type of log loader had a great many good points and shortly afterwards, I had the pleasure of meeting Mr. McGiffert personally and latter became connected with the company in the capacity of salesman, covering the territory East of the Mississippi River.

Upon leaving Duluth, I was instructed to meet the Southern representative in Chicago and secure all the information necessary toward selling the McGiffert Loader. After an interview with him he stated that he had sold two machines east of the river and that was about all the orders that were to be had in that territory, and that all the information he could give me was that I was going up against a tough proposition. The vast fund of information did not discourage me, so I began selling the McGiffert Log Loader with what nerve I had in my system.

Clyde Logging Machinery at that time was indeed very crude, compared to what it is at the present time, as we had nothing to offer but the four-wheel McGiffert with a stiff boom and a lightly constructed Rapid Loader with an oscilliating engine.

About four months later, after hard and persistent missionary work, I succeeded in disposing of one Rapid Loader for loading hardwood logs in the Mississippi Delta, and a few weeks later had a prospective customer for a McGiffert Loader who stated that he "would like to see the machine in operation before he would make the purchase." I felt very good over the prospective sale and took my man to see a machine in operation in Missis-

Harry Schrass and his Charlotte Russe.

sippi. Upon our arrival there, the manager in charge of the lumber plant advised us that the machine was not in operation for the reason that they had broken every cast iron sprocket wheel that was on it, and at the same time advised us that the machine would do good work and load all the logs they wanted it to if it was not for the fact that the breakages on the machine kept it on the side track over half the time. I immediately reported this weakness in the machine and agreed to renew all of their broken cast iron sprockets with cast steel, which overcame this trouble. We later discovered that on account of the heavier and longer logs used in that territory we were compelled to build a larger and heavier machine, with the result that we were troubled considerably with the breaking of light axles. This is another point that came out in the actual working of the machine which eventually resulted in our increasing the size of our axles from five to six inches in diameter.

We were still working on the theory that the four wheel McGiffert Loader was perfect in every respect but found there was a demand for a swing boom machine, and if my memory serves me right, the idea of the swing boom attachment on the McGiffert Loader came to Mr. McGiffert while lying in bed suffering with an attack of appendicitis in a hotel at Hattiesburg, Miss. and this accounts for our present swing boom loader.

We later found that where light rail was used and the road bed was soft that the four-wheel machine was very hard on the track, which compelled us to develop a means to overcome this difficulty, with the result that we later added the four-wheel trucks and which completed the best general purpose Log Loader in the world.

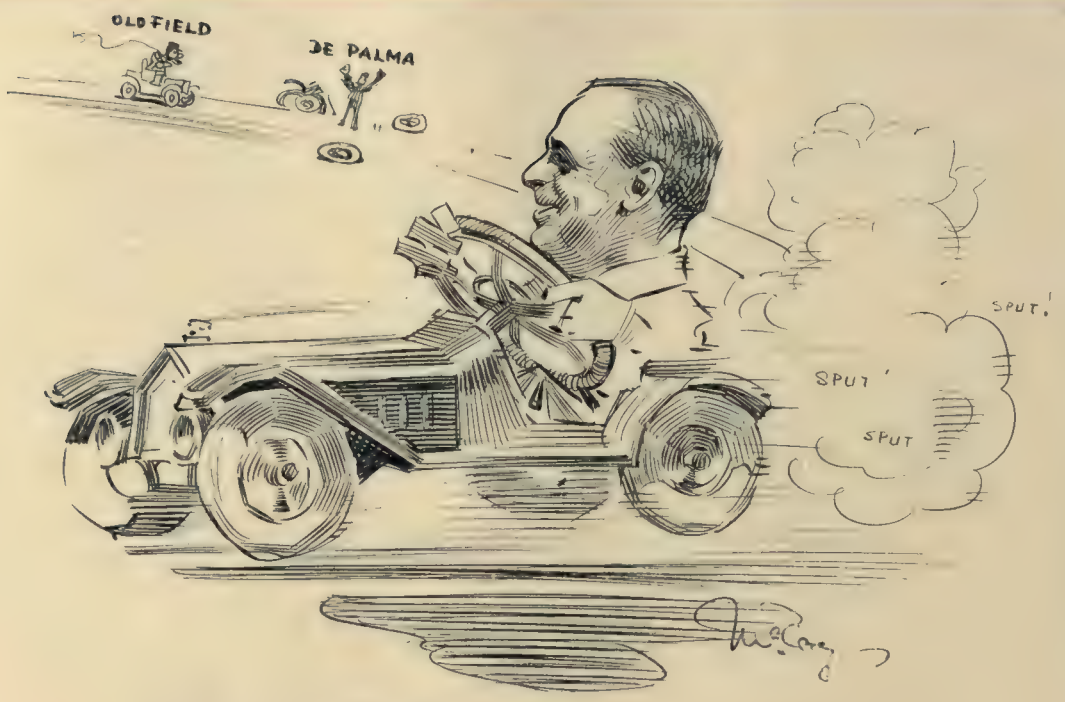
It would require a great deal of time and explanation to tell you in detail of the troubles we had to overcome in introducing the Clyde Logging Machinery and a paper covering every little change and detail would fill a large book, so I will eliminate the detail and pass on to the Clyde Steam Skidder.

In introducing the Clyde Steam Skidder to the lumber trade, we were compelled to overcome the prejudice of the majority of the logging superintendents as well as every driver on the works. In addition to this, it was almost impossible to secure competent men to remain in the woods and operate the machine. Of course the first two or three Clyde skidders were built largely as an experiment and I will try and give you in detail our experience with the skidder first sold in the territory east of the Mississippi River. The machine was sold to a firm of logging contractors and after several months of hard labor and a good deal of grief we were compelled to take the machine off their hands. I visited their woods to find out what the trouble was and I found that their trouble was largely due to the fact that the men in their employ did not want the machine to do good work and the proprietors became weak in the knees and decided that they would continue to use teams as before.

I later sold this same machine to another concern at Hattiesburg, Miss. who after using it for several months also decided that steam skidders were not a success. Upon investigating the cause I found that their woods superintendent as well as every employee in the woods, were prejudiced against the use of skidders, in fact they became so bold as to threaten to blow the machine up with dynamite. These several failures did not discourage the Clyde Iron Works and its organization and we continued to fight the game and are still fighting on the same lines to a certain extent this day, although with continued improvements and successful steam skidding, we have about convinced the largest and most successful lumbermen that our ideas and theories were correct.

The improvements made on the Clyde Steam Skidder commencing from the first machine that was built up to the present

Jack Crawford Handing Out the Highball on the Brule.



Arch. Kyle, Jr., in his Kow Killer.

time are so many and so varied that it would require a great deal of time to explain them all in detail so I will omit the detail of these many improvements and say that the present Clyde Steam Logging machinery, when properly operated stands in a class by itself.

However, while Clyde Steam Logging machinery at the present time stands at the head we must be ever on our guard in picking up new ideas in the field and submitting them to our engineering department with a view to improving the machines and originating ideas toward reducing logging costs to a minimum. In order to retain and increase our prestige, it is necessary for us to put our shoulders to the wheel and all work for the success of the customers and prospective customers of the Clyde Iron Works and all who operate Clyde Steam Logging Machinery.

HAVING previously purchased an Echo, the bunch now applauded these sentiments to it.

After which they fell on a flock of food and maimed it for life.

Then came Kyle, with the first installment of "Clyde Logging—Today" under the subtitle of

Logging Shortleaf Yellow Pine

A Paper on Possibilities and Actualities, with Ramifications into Railroads for Loggers:— Cast into the Clyde Convention by Arch. Kyle, Jr.

SHORTLEAF Yellow Pine offers considerable difficulty to the logger because of the typography of the country in which it is usually found.

This is low and swampy or very rough and rolling, in either case making it very hard on men and animals.

Our rehaul skidder is peculiarly adapted for use under such conditions and we have had great success with it in my territory.

The Attoyac River Lumber Company, with operations at Texla and Mayotown, is a striking example of the results which can be obtained in shortleaf with a rehaul skidder properly operated, and I will confine my illustrations to a brief description of that operation.

(Editorial Note: The operation referred to—at Mayotown, Tex. —was fully described and illustrated in the July issue under the caption of "A Million and a Half Ahead of the Mill." We can dig up another copy for you if you are interested and have mislaid your own.)

A number of the loggers in my territory are working towards economy in track-laying, many of them with striking results in reducing the total cost of logging.

It costs from a dollar to a dollar and a half a thousand feet to lift and lay track in shortleaf. This is about twice as much as in long leaf and is due to the character of shortleaf country which I have already described.

A single rehaul skidder can log a pretty big mill if you give it lots of track so as to cut down the skidding distances.

But it doesn't take much extra track to more than offset the addition of another skidder to the logging equipment.

Because it only costs about

twenty-five cents a thousand to go back an extra five hundred feet, while an extra track to cut the maximum skidding distance down that much will cost from a dollar to a dollar and a half.

Another point upon which the loggers in my territory are beginning to lay greater stress is mapping out their railroads well ahead of the skidding and loading.

Some of them have a civil engineer do this work for them, going over the logging grounds, driving tentative stakes and making typographical maps.

Of course the plan submitted by this man is always subject to whatever corrections the riper and more practical experience of the woods superintendent may suggest, who often finds it necessary to make considerable alterations in it.

The main idea is to lay out a skeleton plan of the tracks as they will be laid for logging, trying to equalize skidding chances for all machines and lines so as to secure the greatest possible efficiency from every man and every machine on the job at the smallest possible expenditure in material and labor.

It is sometimes difficult for our customers to get the right kind of men to operate our machines, and to offset this I have been at considerable pains to get a line on all the good skidder and loader men in my territory.

We all know that it pays to keep an eye on a machine *after* it is sold and try to insure the owner's satisfaction with it, and I believe this matter of having a line-up of good men to handle the machines is of the first importance.

As our advertising man has said, our machines are our best advertising agents wherever they are given a fair chance to make good, and I would add to this that our hundreds of satisfied customers are actually our best salesmen.

C. C. KELLEY, manager of the Savannah branch, followed with the second section of "Clyde Logging—Today" under his sub-caption of

C. C. Kelley and his Prize Piscus.

Mountain Overhead Logging

As Explained at the C.L.Y.D.E. by C. C. Kelley.

THE Western section of N. C. and the Eastern part of Tennessee is very mountainous. The mountains are very high, rough and rocky, with long, steep and crooked hollows, the best timber being up these hollows. The growth is Poplar, Ash, Oak, Chestnut, Hemlock and Spruce; the Poplar and Chestnut being very large. The method of logging up to a few years ago was by horses, slides and inclines. For an output of 75 to 100M ft. per day the logger used about eighty head of horses, besides using a number of slides. This latter system was described in detail in my paper of last year. The average contract price for getting logs along side the track by these methods ranged from $3.00 to $4.00 per M, the cutting price of $1.00 per M being included in the contract price.

After several years experimenting with Donkey engines by the operators, with very poor success, steam skidding in the mountains was pronounced a failure, due to the slow speed and light power of these engines, as they naturally purchased the cheapest thing they could for experimental purposes. After spend-

ing a thousand or two dollars and making a failure, they did not take very kindly to a salesman when he interviewed them with a view of interesting them in steam skidding, their answer being invariably "Oh! H—we've tried that out and it's not practical."

However, one of our salesmen, succeeded in selling a four line skidder with horse outhaul to a West Virginia mountain outfit. When Mr. E. R. Fredericks of Pennsylvania took charge, he tried to figure out a way to use it to better advantage and with the able assistance of one of his men they transformed it into a double end overhead machine, which did very good work but was slow; however, it did the work and demonstrated that an overhead with proper speed was the solution for mountain work. In the meantime, however, we had gotten busy and had sold several ground skidders to the Champion Lumber Co., Crestmont, N. C., also several machines in Tennessee. (I described the difficulties of Ground Skidding in the mountains in my paper last year.) Later on Mr. Fredericks accepted the position of General Manager at Crestmont and with his assistance we prevailed upon his owners to purchase overhead machines, provided we could design one that would meet with Mr. Fredericks approval. We immediately got busy and received an order for two of these machines for an early delivery, which with a few changes have proven a success. In a short time, Mr. Fredericks had changed all his ground machines to overhead. I might add here that on his Bemis, W. Va. operation he had also transformed a McGiffert stiff boom loader into an overhead. This outfit had an 8¼x10 engine and with the addition of two pony drums made a successful overhead machine which at a distance of 1,500 ft. maximum skidded (always uphill) about 15M per day, at a very small cost, using five men and burning about ½ ton coal per day. Some of these logs would scale as much as 500 ft.

The next to fall in line was a mill in the Smoky Mountains of Tennessee. I had called on the president of this company at intervals for a period of five years but could not make any impression as he had an 8½x10 two drum engine of uncertain breed which ground skidded about 1,200 ft. with very poor success, so he was not interested in any kind of steam skidding. It was not long before he commenced to hear of results of the ground skidder at Crestmont (which was before the advent of Mr. Fredericks) and the overheads. After an investigation which lasted for several days, he purchased an engine and necessary parts for a ground skidder and built his own machine, costing him in the aggregate about $6,000.00. He did very good work with this machine but had his trouble with side rolls and hangups.

M. W. Lepp, Leaping on the Ivories.

After the Champion Lumber Company had installed their Clyde overheads, he sent his logging contractors over to see them work, resulting in an order for one and new parts for changing his ground outfit to an overhead. These machines were capable of stretching a line about 2,100 or 2,200 ft. and would skid from 15 to 40M ft. per day, costing an average of 85c to $1.25 per M along side of track instead of $3.00 or $4.00 as before. This concern had one place however, where this machine would not be of much use to them. The timber, about eight million feet, was at the end of a steep rocky hollow also lying on the back of the mountains. The end of this hollow from the railroad measured 3,570 ft. It was too expensive a proposition to build a railroad up to so we were asked to build a machine to skid that particular distance. This we did; it being an overhead on runners.

This machine was placed on a side elevation of an opposite mountain at least 200 ft. above the railroad so as to give a good sag to the trolley cable. The idea was to get horses up in the timber, yard he logs to the end of the skidding line, then skid in. It was found that the span was too great as the cable flattened and crushed by it's own weight where it went over the trolley sheave. It was found necessary to reduce the distance and it was shortened finally to 2,500 ft. and now they are getting

along O. K. and everybody happy. This concern is a sure nough plugger for Clyde outfits.

About a year and a half ago I ran across another prospect in West Virginia who had written for a representative to call. The manager said that he had been experimenting a little in steam skidding. He had purchased an old discarded 7x10 2-drum engine for $340.00, very much against his president's wishes, as the previous owner had failed to make a success. He asked me to go out on the job with him the next morning, see his machine work and then criticize or suggest as the thing warranted. He had mounted the engine on a small home made car and put on a make shift boom and A-frame. Just as we arrived, the engineer received the signal to pull in. The logs were coming in over a hill a distance of 900 feet (the capacity of the drums) and at a speed of about 150 feet per minute; when the log came in sight, I saw it was a chestnut about 32" diameter, 14 feet long and much to my surprise it was followed by fifteen others, dogged together, three being balance of the chestnut tree. The skid road was fendered to prevent side rolls. The engineer pulled the end log down to the pile then cut loose, hung on another bunch of dogs and went back after another load that was being yarded up by teams back on the table land. The way the logs were handled at the track was by a loader which pulled the logs down one by one, as the dogs were knocked out, and piled ready for loading. This little outfit was skidding about 150 to 160 logs per day at a nominal cost. Result—a 10x12 ground skidder on runners to go back 2,200 ft.

Some of the small outfits in the Cumberland mountains have a skidding system all their own, the owners contracting certain hollows to different mountaineers. *Paw* enlists the services of his two or three husky sons.

The first part of the job is to select two trees as near the mouth of their hollow as they can and then about twelve feet up they cut a square hole in each tree and another pair of holes close to the ground in butt of trees. Then they cut two logs as long as the trees selected are apart from each other, sharpening each end, and fit them in the holes previously cut in the two standing trees. Then they cut a hole in top and bottom cross log and fit in another perpendicular log so as to make a drum, also inserting a pole so a yoke of oxen can hook up to it, which makes a two ox-power engine. They fasten cable in this improvised drum. Another yoke of oxen haul the cable out to the nearest log, after which it is wound up by this powerful engine. At the end of thirty days they have skidded about 40M, getting $2.00 per M. So at the end of each month the old man has $80.00 to divide among his sons—the boys share being mostly hades from the old man, given them during the month. This is called Weerning. Where the name is derived from is an open question. However as it is not an infringment on any of our systems, I guess we can drop it right here.

Harry Fletcher Hoist with his own Petard.

THE convention now turned to the consideration of improved land clearing machinery and methods, listening with interest and profit to Merwin Armstrong, the Clyde expert in this department.

Mr. Armstrong has given us the benefit of his long experience in a series of papers in past issues of STEAM MACHINERY and all who recall them will need no editorial assurance of his complete capability to handle this subject, even to a bunch of "efficiency experts."

With these few, carefully pickt paragraphs, it gives us pleasure to introduce:—

Land Clearing Machinery

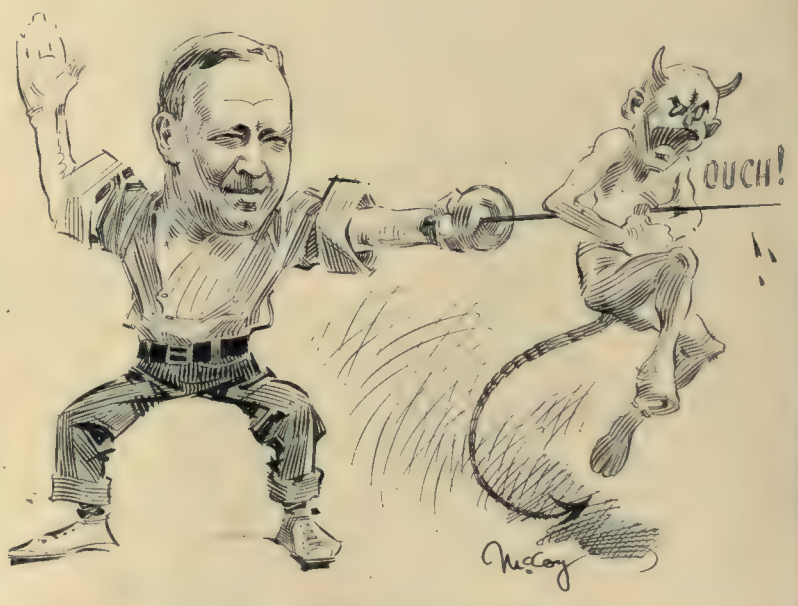
Being Part of a Paper by Merwin Armstrong

DURING the past year the Land Clearing Machinery of the Clyde Iron Works has been straightened around and developed into a tolerably complete line. The types of machines are now well determined and their design settled we hope, definitely and satisfactorily. An effort has been made to describe the machines systematically and in some detail in a new catalog, which is much better than anything which we had before.

There are two major divisions of the land clearing machinery, the Ground Skidders and the Steam Stump Pullers. The Ground Skidders we are all familiar with. Regarding them it may be of interest to review briefly their field of operation and the different styles. It is needless to tell you anything about their use in logging which is really the first step in clearing. They are for the second step. They are not fitted for stump pulling nor intended for it, except in a few cases of small growth as in some swamps, or where the stumps are old and of the flat rooted type merely resting on the top of the ground.

Wherever there is a heavy stand of timber, or any amount of large tops, logs, etc. of no commercial value, that must be removed to permit cultivation, there is a field for the Ground Skidder as a clearing machine. Its greatest usefulness is in clearing hardwood, particularly swamps where growth is heavy, as in the bottoms of the Mississippi. There no attempt is made to take out the stumps, but large quantity of cull timber, heavy tops and old logs cover the ground even after everything merchantable has been taken out. This land has great productive value, but such material must be removed to get at it. The Ground Skidders pull this up into large piles, putting three or more acres into a pile, handling the pieces intact, tree-length. The saving over hand methods is in the labor required cutting up and sawing by the fact that the material is put in such bulk that it can be entirely destroyed by fire, and by the rapidity and ease with which the wild land can be prepared for cultivation.

The Ground Skidders are made in two types, one with horse outhaul, the other with mechanical outhaul. They are made to operate either one or two skidding lines, though as a rule two may be used to best advantage. Both types are made with skidding engines of sizes ranging from 7x10 and up. The 9x10 is suited for most conditions and is the best general purpose machine. Regarding the use of the outhaul a little explanation is desirable. The greatest loss of time in operating is in the unhooking and getting the line back down the pile. With a mechanical outhaul this is avoided. The line not only goes back quickly but it very seldom loses time at the pile. However the average clearing operator will not employ men capable of handling the rehaul machine. So for the farmer or the man with small mechanical ability the horse outhaul is best. It is so simple in operation that there is little excuse for anyone failing to work it. We have had failures, tho, even with it, due to rank incompetency. Witness, here is a man who has a section cut a number of years and grown up to big briars, thick underbrush with remainder of heavy tops lying about, and some trees. He cuts down the trees and puts the skidder at work, expecting the dragging of the trees, etc., to break down the brush. The men spend half their time avoiding the brambles, dodging about the brush and work the lines to small advantage. This undergrowth should all have been slashed down first. If dry season allowed, a fire might have been run thru, burning it out, if not it should have been cut in windrows that would have permitted its burning. Then of course there is the man who gets cheap labor that only half works at best; in addition this fellow is sure to let his equipment get in bad shape, and breakdowns and waiting for



A. E. Holcomb at his Favorite Indoor Sport.

new parts, cable, etc., will consume the big part of his time. This is why the use of the rehaul machine is so limited.

The Clyde Land Clearing Machine, frequently called the Steam Stump Puller and Piler, a good descriptive name, is now listed in three sizes. Between them they fulfil the requirements for practically all stump pulling work. In the catalog they are listed as "A," "B" and "C."

"A" is the largest machine, equipped with 10x12 engines. It is adapted to heavy work such as found in the Southern belt of Long Leaf Yellow Pine. It is also adapted to much of the clearing on the Western coast. Wherever the skidding is hard, as in some hardwood sections, with large stumps that are heavy and bring out much dirt, the 10x12 is advisable even though the pulling itself is comparatively easy. It pulls stumps that are thirty and thirty-six inches in diameter, and skids those that weight ten or twelve tons with ease.

"B" is the general purpose stump puller, such as used at the Greysolon and Caribou Farms, equipped with 9x10 engines. It is adapted to the Eastern Long Leaf Yellow Pine belt, to the Northern clearing generally, and wherever the stumps to be handled can be skidded with a 9x10 engine at ordinary speeds. It works best where the stumps are all under 24" diameter.

"C" is really for stump pulling only. It is a light machine with 7x10 engines, similar to others in construction, but without the piling equipment. It is meant for pulling small stumps that can be handled by hand after pulling out of the ground. Its field is wherever stumps pull comparatively easily and do not need to be skidded in and piled. Much of the long leaf pine territory in the Carolinas comes under this description. It is also well adapted for clearing on construction work, such as reservoir and dam sites, levee bases, etc. Frequently work will be too limited in extent to afford a large machine. Then this one can be used profitably in connection with dynamite, breaking up the large stumps before pulling. It has no piling equipment, but can be furnished with a gypsy drum which will handle a line over a gin pole or spar tree, making a pile that way.

In closing let me remark that in general the land clearing field is showing better possibilities than ever before. Much new land is acquiring recognized value that will permit of its clearing. Methods of practical utilization of long leaf yellow pine stumps have made considerable progress and offer much promise. Unquestionably it will be but a short time before stump utilization in the pine belt will be a big thing. We have the cheapest way of getting stumps for this purpose.

It has been conclusively shown that machine work is most economical, and we are in a position to undertake work with assurance of success.

(Editorial Note: Mr. Armstrong gives a complete detailed description of these machines in his paper, but we understand that this same matter is covered in the new Land-Clearing Catalog to which he refers and which can be obtained direct from the Clyde Iron Works at Duluth by all interested.)

JIM MEANY, representative of the Clyde on the Pacific Coast, was physically absent from the convention, but psychically he was there with both feet and his head.

He sent in a long and carefully-written paper covering Coast conditions, which was ably elocuted by Sales Manager Lumm, and which we have condensed into the following:

LOGGING IN THE WEST

A Prophetical Paper by J. M. Meany

IN the fir contry where the timber is small and not too thick per acre, there is a good field for Clyde skidders. So far we have a four line skidder and a McGiffert loader at work near Seattle. As might be expected this machine is going thru a period of adjustment to new conditions, but we think that before the year is out these machines will have made good with both feet and we will have an opening into the fir country. In starting this machine, many things occurred that do not occur in Southern Work, but these are being overcome and as stated before we do not doubt but that the machine will exceed the purchaser's expectations.

Taking next the Southeast quarter which lies mostly in Eastern California in the Sierra Nevada range, we find that the timber is big, running 500 to 1,000 feet per log with logs up to 5,000 feet cut in 16 ft. lengths. The yield per acre is high sometimes as much as 60M to 70M per acre. The timber is Western Yellow Pine, Sugar Pine, Red Fir and White Fir, the latter being quite a different fir from the Douglas Fir of the Northwest. The country is often very broken but sometimes large tracts of level land heavily timbered occur as in the Mountain Meadow country where the Red River Lumber Co. are building their new mill at Westwood, Calif. Logging in this section is carried on by donkey engines at present and sometimes by high wheels using McGiffert loaders for loading.

The Northeastern quarter is the largest division and the one where we hope to do the most business. This section takes in the Northeastern part of California, Eastern Oregon, Washington and British Columbia and Idaho and Western Montana. The timber in this section runs much less per acre than anywhere else. Fifteen thousand to twenty thousand per acre are good stands, the average being

Jim Meany Really Thinks He Can Sing.

under fifteen thousand. The timber is Western Pine, some Fir and Larch in the northern part. In general the woods are open, that is, not much underbrush. All conditions of ground are met, level, even slopes, rugged broken country, so that no two operations are exactly alike. Sometimes it is possible to get tracks on the grounds so as to cut down the skidding distance to 700 or 800 feet while in other places it is necessary to go back 3,000 to 4,000 feet. Taking the Weed operation as a typical example of the Southern part of this section, we find that their timber is Western Pine running about 15M per acre. Logs average about 5 per M cut in 16 foot lengths. The timber is located on the slopes of mountains, but these slopes are even and not broken up by small gullies and ravines. The mountains are often cone shaped, being in fact old extinct volcanoes, so a railroad can be carried up to the tops by winding around the mountain. Sometimes on top there is a considerable extent of fairly level land. On the lower slopes, where the grades are not too steep, they operate wheel camps loading out with the McGiffert Loaders.

To get the more inaccessible timber heretofore they have used two donkey engines, but the output per donkey does not average over 20M per day, so that the cost per M often runs up to $9,00 to $10.00. To overcome this we have designed and installed a new overhead cableway machine that embodies some features not in any of our machines built heretofore.

The Weed Lumber Co., in the light of their experience of logging in this country, demanded that we build a machine that would do the following: Skid and load at the same time, work one line as an overhead, or two lines on the ground. To do this we combined a Universal frame and McGiffert swing boom loading rig with an Overhead skidding engine and boom so that two lines can be run on the ground or one overhead. The machine has just been erected by Mr. Blair and started skidding and with a few minor changes we think this machine is going to be one of the most successful machines ever put out by the Clyde Iron Works. It behaves wonderfully well on the track, so much so that Blair said he would take it anywhere. It is true that at Weed the ground is very firm, and they use 50 pound rails with 17 ties per rail. Would advise to always be sure of track conditions, as this is one of the first things that is necessary on this machine. The machine loads as fast as it skids and the clean landing makes the work of skidding considerably less.

At present the machine is running as an overhead machine, going back 1,800 feet. No records are available at present as during the few days the machine has been operated nearly half of the time has been taken up in making changes and adjustments. The last day we were there, with a green crew and an engineer who never ran anything before but a stiff boom McGiffert loader, they got 27,500 feet on an average haul of 1,700 feet during probably seven hours actual running time. This was because the day was the Fourth of July and they quit work at 4:00 P. M. Another hour was lost in making adjustments. We expect this machine to average 50M per day with the following crew:

1 Hook Tender	@	$4.00	$4.00
2 Helpers	@	3.50	7.00
1 Whistle Boy	@	2.50	2.50
1 Deck Man	@	3.00	3.00
2 Loading Hookers	@	3.00	6.00
1 Top Loader	@	3.50	3.50
1 Skidding Engineer	@	5.00	5.00
1 Loading Engineer	@	3.50	3.50
1 Fireman	@	3.50	3.50
2 Wood Buckers	@	3.00	6.00
Total Wages			$44.00

Thus the wage cost of skidding would be about 90c per M. It is interesting to contrast this with a donkey crew working where this skidder is set and going back 1,800 feet. It would do well to average 20M per day,

but to be sure we will call it 25M per day. The donkey crew would consist of the following men:

1 Hook Tender	@	$5.00	$5.00
2 End Men	@	3.00	6.00
1 Whistle Boy	@	2.50	2.50
1 Donkey Engineer	@	4.00	4.00
1 Fireman	@	3.00	3.00
2 Wood Buckers	@	3.00	6.00
1 Tommy Moore	@	3.00	3.00
1 Spool tender	@	3.00	3.00
2 Loading Hookers	@	3.00	6.00
1 Top loader	@	3.50	3.50
Total Wages			$42.00

The wage cost for skidding with the donkey would be $1.68 per M or 78c more per M than the skidder. While it is true that the overhead and repair bill would be more on the skidder, this is offset by the fact that the cable expense is considerably less on the skidder. It is safe to say that in timber like the Weed machine is operating they can save from 50c to 75c per M. Figuring it at 50c per M this would amount to $5,000 in a year's run.

Going further into costs in this country it is interesting to see what logging is done for. However in going over these figures, have in mind that this wheel logging is being done under much more favorable conditions than those under which the skidder and donkey are assumed to work. Taking a good sized wheel camp, using a McGiffert Loader for loading, slip tongue high wheels for skidding going back about 1,200 feet and hauling down hill, using bunching teams to yard the logs out of the brush, we find that during the summer months the costs run about as follows:

Falling	$0.21 per M
Limming	.10 per M
Bucking	.37 per M
Swamping	.40 per M
Skidding	.47 per M
Horse Feed	.41 per M
Loading	.20 per M
R. R. Operation	.59 per M
R. R. Spurs	.50 per M
Blacksmith	.08 per M
General Expense	.11 per M
Total	$3.44 per M

This is assuming an output of about 3½ millions per month or from 125M to 150M per day.

J. J. Lumm in his Baby Benzine Buggy.

Comparing this to the skidder above referred to we have the following items of expense to compare to the skidder expense:

Skidding	$0.47 per M
Horse Feed	.41 per M
Loading	.20 per M
Swamping	.40 per M
Total	$1.48 per M

However if the skidder was operating in timber similar to the horse camp, the skidder output would be increased a great deal. Besides this there would be a considerable saving in railroad construction due to the fact that the skidder can bring the logs up hill to the track as well as down hill. So from all present indications the skidder would beat the horses if given the same chance.

At the present time lumber conditions are quiet out here and quite a few of the mills are shut down but all indications point to a change for the better. It is somewhat slow work to get people to adopt new ideas and ways of doing things, as well as to educate men to operate the machines. One thing we are trying to avoid is paying top prices for operators and men to work around the machines.

We can't change conditions out here, so we must change our machines to fit the western conditions. We are trying to work this out and ask that you work with us, for we can do but little more than point out what changes seem best.

In concluding would say we would like very much to have Mr. Bjorge visit the Pacific Coast and go around to see some of these machines at work and what we have to contend with.

AFTER the applause, with which the concluding paragraph of this paper was received by the Engineering Department, had died away, President Luster called for the last logging paper of the convention. This was also along the prophetical order, and was delivered by the New England Clydist in person, F. C. Adams, named after his (and our) primeval parent.

LOGGING IN MAINE

Set into Sentences for the Clyde Conventionalists by F. C. Adams

THE entire state of Maine is now logged by the old methods, namely sleigh haul and driving of rivers, with three exceptions where rail logging has been tried out.

The greater portion of Maine logging however, is done by sleigh haul and river driving and I believe the machines that will work out to the best advantage and ones that will become universally used are the combination overhead and ground skidding machines mounted on steel runners, similar to the one we now have at Island Falls, Me. with the necessary attachments they propose to install as per our suggestions. I believe that three-fourths of the lumbermen in Maine can and will use these machines and can use them very successfully.

This section of the country is very slow to adopt any new methods on account of the unusual amount of water and navigable streams in this section, but their haul is getting greater each year and some of the concerns are now hauling 18 or 20 miles on sleighs by means of steam sleigh haulers. So, it is possible that in the near future logging railroads will be in operation but the combination ground skidder can be used very successfully in connection with sleigh hauling. The method to be used would be to skid logs up during the summer along skid roads so that they can be easily and quickly loaded during the hauling season in winter. The winter seasons are getting much shorter in this section, which fact has commenced to worry the lumbermen considerably, as it is a case of rush for about two months to get out their summer's cut. This is another reason why railroad logging will be adopted in the near future.

The idea of our present operator is to use a ground skidder for skidding to skid roads during summer months, bringing machine down on first trip in fall to use for an unloading machine and decking machine. This operation was quite successful last winter but could be greatly improved by making changes as suggested by the writer and this suggestion has met with the approval of the manager of said operation.

No doubt some people are under the impression that practically all of the timber in Maine is gone, but this is an erroneous idea, as there is sufficient spruce in Maine to last at least 50 years. The greatest disadvantage and drawback in using skidders in Maine is the fact that they do not cut the land clean as they do in other states. The average cut per acre is from 3M to 7M feet and by leaving the smaller growth they can go back over same ground again in from 10 to 15 years and get equally as much, as they claim spruce grows from 7 to 10% per year. On account of leaving this small timber their yield per acre is not great and they are afraid that a skidder will destroy their small growth. This objection can be overcome by using the overhead type of skidder and this type of machine will be most universally used because the country is rather rough and full of pot holes. Another reason for my prediction of the use of skidders in Maine is the fact that they have a large quantity of hardwood which has never been operated except in a very small way and it is impossible to use their present methods, rivers, for transporting this class of material.

(*Continued on Page 285.*)

F. C. Adams in this Customary State.

J·R·McGIFFERT
Secretary & Treasurer

Some Notes on American and European Timber Imported in Great Britain.

GREAT BRITAIN is probably America's best customer for timber; it is required mainly for constructional and mning purposes, but also in connection with mechanical work, both with regard to pattern and in relation to the erection and removal of heavy machinery. The proper selection and use of timber for these purposes is a subject of the utmost importance on which many industries are more or less interested. A few figures will indicate the extent and importance of the British market, which is a steadily growing one, as the native production of timber is an extremely small one, and no systematic forestry system has been established to foster and encourage the growth of trees, as in many other European countries. France, Germany and Russia have well organized Government departments specially charged to manage and supervise their forests, encourage planting on scientific lines and educate experts for the duties. But Great Britian with vast areas of suitable land has left forestry and the planting to private enterprise; with the consequence that that country is dependent on America and other sources for her supplies. The total imports of all classes of timber last year exceeded $136,000,000 of which America sent a very respectable proportion including hewn fir, sawn, split, planed and dressed fir, oak in very large quantities, and others. For all ordinary purposes the kind of timber most used for pattern making and in temporary structures, such as travelling cranes, staging, framework, platforms, for the erection of bridges, building construction, telegraph work and others is fir; generally American, but competing supplies come from Russia, Sweden and Norway.

The nature and properties of the different descriptions of fir which are generally met with in British markets may be briefly described, but before doing so it may not be uninteresting to readers to give them a very slight sketch of its introduction into Great Britian, Previously to the colonization of America, British supplies of fir timber were obtained from the countries bordering on the coast of the Baltic, of which Norway, Russia and Sweden were the first resorted to. The colonization of America however soon opened a large and valuable field for obtaining timber of simi'ar growths, including lumber that came both from the United States and Canada, both yielding large supplies of a very fine quality. Several decades ago important supplies of the same class of timber were obtained from Savannah and the adjacent states and efforts were made to establish a timber trade with California, where is to be found some of the finest red wood ever brought into the British market It is possible that the opening of the Panama canal may extend the sources of supply to the Pacific coasts of North America, not now available.

The special qualities which render each kind of timber suitable in the opinion of British experts and users, may be briefly summarized as follows: Fir timber may be divided into three distinct classes, known by the color of their wood, viz: white, yellow and red. White wood is often imported in the form of deals three inches thick by 7, 9 or 11 inches wide and in lengths of from 8 to 24 feet; it is only occasionally seen in logs in Great Britian. These timbers come both from the United States and the Baltic regions, but they are so nearly alike in general appearance that only a thoroughly practical observer is able to detect the difference; the qualities of the two sorts of wood, however, differ considerably, as do the uses to which they may be applied. One of the most frequently specified is the American Spruce Deal, principally used for joists and bearing timbers of ordinary houses, as well as for scaffolding in the erection of both machinery and buildings. Some of the timber is of the finest quality and if it were all of equal quality it would be even more generally used than it actually is; but there is a considerable proportion of an inferior quality and it is therefore very necessary that a thorough practical knowledge of such timber should be acquired by those under whose direction it is used or specified, as serious accidents have been known to happen when it is misapplied.

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in the British market as Baltic while deals, is a wood of fine texture used principally for the same purposes as the American spruce deals; it will not as a rule bear so great a load as the American, but in the opinion of some experts it is less liable to warp from changes of temperature. Both these kinds of timber are especially liable to decay if placed in warm and moist situations; fungi have been known to form on them causing what is commonly known as dry rot. When once this has commenced the wood is no longer to be depended upon; the only remedy being to remove it and substitute new material. Thoro ventilation and air movement is a preventative.

These woods are also both extensively used for packing cases for goods and machinery and for this purpose they are quite as good as more expensive timber. In the great goods exporting center of Manchester the demand is so large that packing-case makers constitute quite a special and important trade.

American yellow pine may be discussed next. This timber is generally imported in logs and is cut into boards or scantlings in Great Britian. Like the white wood this timber is practically non-resinous; it is of a fine texture and when not exposed to damp is very durable. It is used much for building purposes, especially for joiners' work that is to be covered with paint. As a bearing timber it has a peculiar quality, namely that it retains its form with a permanent load, whereas many kinds of timber when loaded continue to deflect for years and although the load may not be greater than it might safely be required to bear. This is the kind of fir which is largely used and is of especial value to machinists for pattern making, as when once dry it retains its form better than any other soft wood; but unless this wood is properly treated from the log its valuable quality of retaining its form when worked would be materially impaired. The log should be opened and cut into boards in the autumn and exposed to the weather through the winter; in the spring it should be removed into the drying shed and thence into a room having a corresponding temperature with that wherein it is to be stored when finished for at least one month before being worked. On no occasion should this wood be placed in a stove, as on its removal from the high temperature it will always be liable to change its form.

There are many qualities of yellow pine; for example some Canadian, which, although to a casual observer very similar, are in reality inferior in quality to the best American, being less

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equal in their texture and therefore much more liable to warp.

The third variety of fir timber to be referred to is *red* wood, which is imported into Great Britain both from North American and from the Baltic countries in the form of both logs and deals. The Baltic timber is known as Memel; unlike the white and yellow timber, the red is resinous and is much more durable than either of the other kinds. There are several varieties of red deals, each possessing its own peculiar character, but all of them more or less valuable, on account of their power to resist atmospheric changes and the action of moisture; it is therefore much used in engineering work. for piles and timber framing exposed to the weather; for railway sleepers and in all places where it is necessarily shut out from a free passage of air. It is also less liable than any other kind to dry rot. The timber sent to Great Britain from Sweden is generally of a very inferior quality and of small size, few logs being more than 12" square and 30 feet long; it is very liable to crack if exposed to the sun, causing what are known as "sun shakes." The custom at all British ports on the arrival of the timber is to place all the logs in water to prevent this. Special areas are set apart for this purpose.

A special variety of this timber is known as "pitch pine;" it is generally imported into Great Britain from the Southern States of North America. It is strongly resinous, but has a great tendency to dry rot, especially if it should be placed in contact with fresh mortar or lime. This timber is therefore unfit to be built into walls as bearing-beams, unless the ends are placed in cast iron boxes, or are otherwise protected, so as to allow a free circulation of air around the ends of the beams. Many specimens of this timber have a very beautifully waved grain and will take a high polish; these are selected and used for ornamental joiners' work.

One peculiarity in connection with all red wood is the varied qualities found in the same log; thus the lower portion of a tree may be exceedingly good, while the upper part may be very inferior. American red pine is a very strong and useful timber for bearing purposes.

From what has been described above of the nature and qualities of fir timber, readers will realize that it is impossible to fix any arbitrary formula that will be applicable for calculating its strength, as the quality being so variable the

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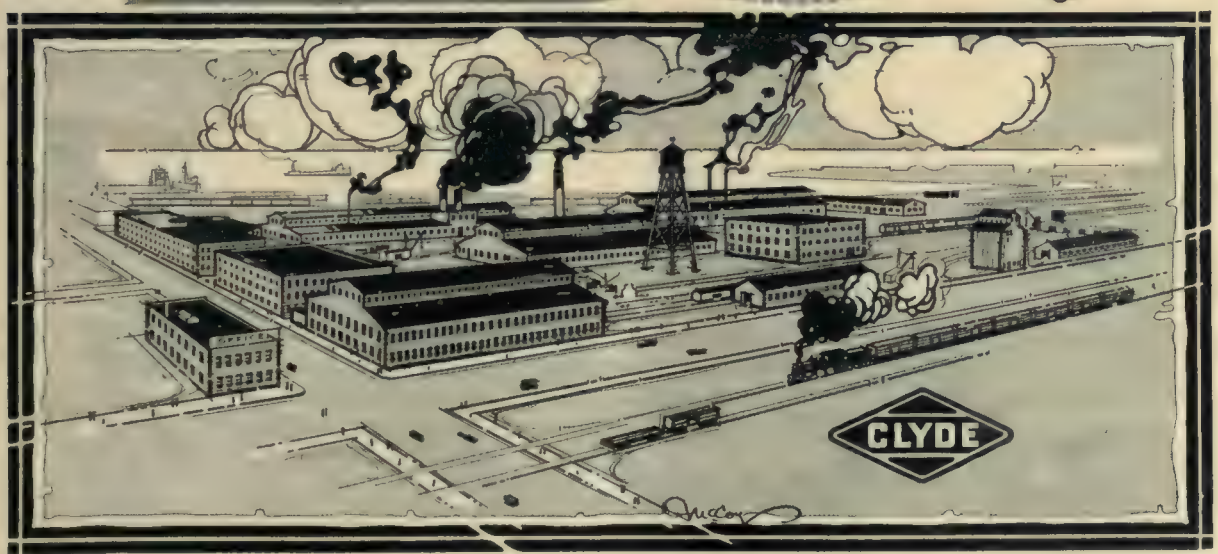

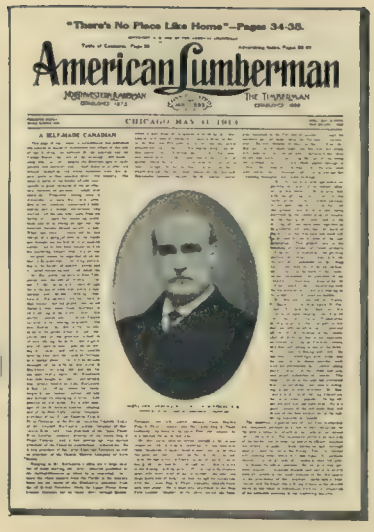

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same formula would not apply exactly in any two cases.

Great Britain's imports of timber from the United States during recent years may be summarized as follows:

	1912	1908
Hewn Fir	$648,000	$655,000
Sawn Fir	8,085,000	6,390,000
Oak	4,650,000	4,200,000
Staves of all dimensions	1,306,000	697,000

In addition there are imports in smaller amounts of other classes of timber, as well as of manufactured timber, including furniture, cabinet ware and house frames, fittings and joiners' work.

Canadian timber is sent in very much smaller quantities.

— CLYDE in Convention at DULUTH —

(*Continued from Page 276.*)

Therefore it will be necessary to load same on cars and about the only way to handle it will be by private logging roads. It is impossible to cut and deck up hardwood logs in summer as they do at present with spruce and so it will be necessary to handle their hardwood direct from woods to plant in the shortest possible time.

As the hardwood in Michigan is being cut out and will in a few years be almost entirely gone, they will naturally come East. The Eastern hardwood is not so good as that of Michigan but it has the advantage of being near a large market and it will all be utilized in the near future. Not very long ago I heard of a Michigan hardwood operator investigating a large tract of hardwood in Maine.

SO far as our readers' interest therein is concerned, this terminated the program. Motion pictures of Modern Logging were shown on the last night of the convention, after which the bunch beat it back to pack their trunks.

Long before these concluding words impinge upon your optic nerves, they will be back in your midst where you can ask them all about the omitted details and also the unconventional parts of the Clyde Convention.

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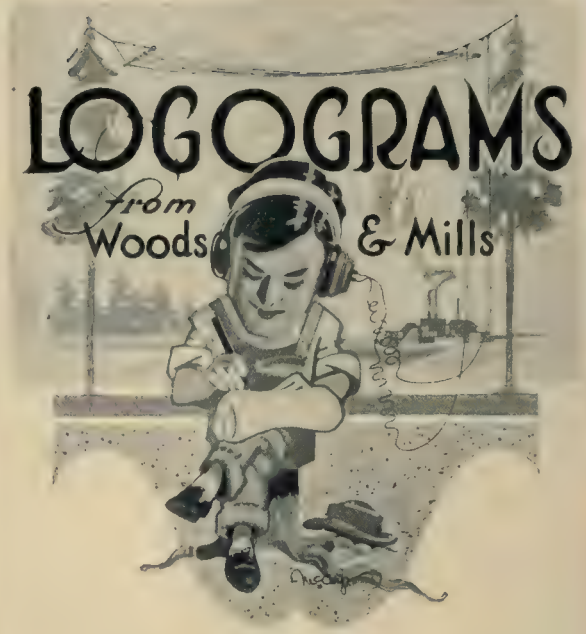

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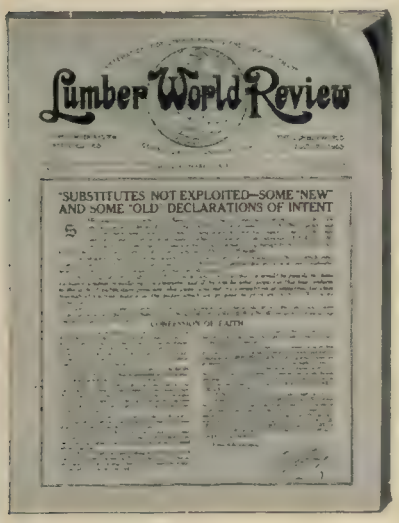

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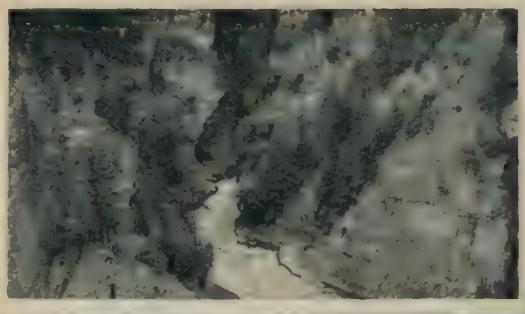
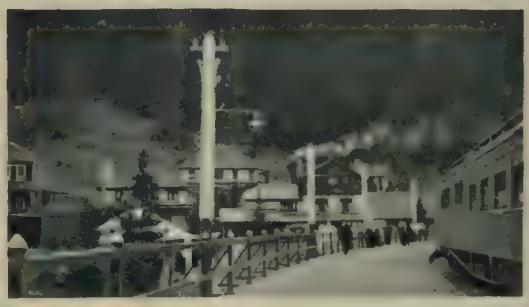
OUR TRAIN ON THE SOO-PACIFIC STOPPING EN ROUTE AT THE: ILLICILLEWAET GORGE

··· MI FIELD ···
AND THE MOUNTAINS ABOVE FIELD

THE GREAT GLACIER AT GLACIER



LOOKING DOWN INTO THE ILLICILLEWAET GORGE



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OUR EDITORIAL NEEDS.

"STEAM MACHINERY" wants and is willing to pay for the co-operation of its readers in editorial and reportorial work.

We want to keep abreast of conditions in all departments of the logging world; giving our readers the first news and the true news about labor saving methods in their respective fields.

We want to know what the men behind the machines are doing to cut costs and increase efficiency in getting logs, laying and lifting track, caring for their machines and so forth.

We believe it will profit the men who are doing things to let us publish the evidence of their efficiency; we know it will benefit the industry as a whole to read reports which will have a tendency to increase practical knowledge and kindle ambition.

We know that the man who has these facts is not usually a writer, but we have plenty of pen-pushers who will attend to dressing up such articles for publication.

We want and will pay for the *facts* without caring a cuss about the form they come in, just so our not-very-intelligent reporters can get the point plainly and work it into perfectly pleasing paragraphs for the printing press.

We will pay according to the value of the idea, such value to be judged by the amount of space our editorial staff finds it worthy to occupy, at five dollars the full three column page of ten point type, excluding illustrations, for which we will pay one dollar apiece.

THE PUBLISHERS.

The Editor Thinks

WE ARE slowly passing beyond the age of bodily cleanliness into the age of clean minds. ¶ Having demonstrated the healthfulness of bathing the body with sufficient frequency, men are discovering the happy habit of bathing their brains. ¶ And a clean brain is, in truth, even more essential to health than a clean body. ¶ For the brain is to the body what the boiler is to the engine, the source of Power. ¶ Let the engine glisten and scintillate with cleanliness and it will avail little if the boiler be choked with scale and filled with filthy water. ¶ A clean engine can use all the power the boiler will give, but a dirty boiler cannot furnish one-fifth the power a clean engine could use. ¶ Now this is a peculiarly happy simile and we will e'en pursue it a little further along the lanes of logic. ¶ Because a brain becomes inefficient from causes strikingly similar to those which occasion the inefficiency of a boiler, and the effects are much the same. ¶ Bad feed water is the great evil. ¶ For a brain cannot create power from nothing. ¶ It must have the water of *impressions* before it can produce the steam of *ideas* to pass down the motor-nerve steampipes and get behind the muscular piston-heads. ¶ Now if the Ego feeds his brain-boiler with impressions founded on the dogmas of dead thinkers which are to be taken as Facts, these dogmas will be deposited upon his thot-tubes just as scale forms among a boiler, constantly reducing the area thru which the free steam of original thot may flow. ¶ A Dogma is what the Other Fellow lays down as Law on what has not yet been proved. ¶ Dogma is an accumulative poison and dogma-drinking is a growing habit. The more unproven things a man credits the more credulous he becomes, until at last he believes almost everything but himself. ¶ Dogma-infected impressions *will* get into your brain, for you must pick up the waters of knowledge wherever you find them. ¶ But you can blow them off even as the efficient engineer blows off his boiler, if you care to do a little original and critical thinking every day. ¶ And if the scale is already well formed you can use an antidote. ¶—Take "Steam Machinery" for example: we are trying to make it serve your brain boiler as pototoes, kerosene and other scale-chasers serve the steamboiler. ¶ But we claim no monopoly for our product. ¶ There are dozens of books and periodicals to-day which aim at this same target of fresh, clean thot; which blazon on their banners the same slogan, Death to Dogma! ¶ Do your own thinking and there will be no accumulations of scale (inability to think for yourself) in *your* brain-boiler. ¶ But we can chivy this simile of ours yet a little further. ¶ For, granting that you have kept your thot-tubes free from scale, there is always the danger of *muddy* water which will cause foaming and priming. ¶ The source of inspiration must be clean if your brain-boiler is to do efficient duty. ¶ Muddy stories and bestial books will never turn into the steam of splendid service. ¶ And, unfortunately, the stream of modern literature has been somewhat

badly choked with sewage of late. ¶ It is a far harder task to get folks interested in a noble and inspiring theme than in one which appeals to their passions. A keener kind of craft is required, because people will not pass clumsy craftsmanship in the domain of pure thot. ¶ But where the end in view is to arouse the emotions rather than the intellect, then the phrasing may be as clumsy as you will and the plot as involved, if only there be sufficient *suggestion* of the right—or rather *wrong*—sort, the readers will do the rest! ¶ With the advance of popular education whereby all have learned to write there has been formed an army of authors of this sort. ¶ Finding that they cannot command attention by stringing words together to form platitudes, they go on to discover how much easier it is to make men *feel* than to make them think. ¶ They find also how little craft it needs to play upon the primitive passions which—despite our centuries of civilization—lie just beneath the skin. ¶ And so, since they can find "Fame" in no other way, they prostitute their pens to the creation of mental mud, which millions take into their thot-tubes, thotlessly enough. Whereby their boilers are bunged-up and, eventually, their engines passed to the cosmic Scrap-heap. ¶ And hence a greater need for mental cleanliness, which is beginning to be perceived among us. ¶ We must bathe our brains in pure, clean thot at least as frequently as we bathe our bodies in pure, clean water if we are to be constantly in condition to pay our Debt to the world. ¶ And this Debt, which is renewed daily, is to serve our Ideal with all our hearts, with all our minds and with all our souls, and our neighbors as ourselves. ¶ It is the price we pay for Happiness.

AT ONE TIME OR ANOTHER nearly all of us have walked between fluted pillars under astounding domes, gazing up at glass rainbows caught in marble webs. ¶ And we have all carried our hats in our moist hands, conversed in awed whispers and walked circumspectly as befitting a funeral or a birth. ¶ "Gee, aint it great?" or "How marvelously beautiful!" we have whispered, according to our past environment, and have gone on out into the street seeing men as statues walking, trees as bronze columns and the sunlight seeping thru them as thru multi-hued prisms. ¶ In reality, of course, the reverse was true. ¶ Just as the statues were men in stone, the columns were trees in marble and the stained-glass windows were the merest imitation of sunlight disentangling itself among blossomful branches. ¶ A man's mind is made up by his natural environment and he can conceive nothing which may not resolve its component parts back into that environment. ¶ The solemn silences of the eternal forests with their brooding half lights invited him to his first primeval worship and for uncounted centuries he was more than content with these. ¶ Meanwhile the Creative Idea grew and asserted itself. ¶ Besides, the weather knew no Sabbath and it was difficult to be decently devout wrapped in a sopping wet hide. ¶ Long ago he had learned to build roofed shelters where no caves afforded protection from Jupiter Pluvius on his periodical jamborees. ¶ But for his worship he needed wider spaces, a loftier roof and more beautiful surroundings than any humble human home could afford. ¶ These he had been wont to find in the forest, and to the forest he now went for the models wherefrom to copy his more colossal creation. ¶ However closely man may copy Nature he

never can arrive at all the beauty of her, for hers is a warm *living* beauty while his is a matter of beautiful line and tone. ¶ And so his greatest miracle in ecclesiastical architecture falls far short of what you and I may see every day of our lives:—if we have eyes to see. ¶ Here, over a hundred thousand acres of our emerald atom, fifty million shafts of dull-scaled bronze hold up the opal sky among their fronded foliage. ¶ The splendid sunlight filters thru in many tones of purple, yellow, green and red, sinking at length into a heavy carpet woven of brown pine-straw and velvet mosses, graceful ferns and scented cones. ¶ The endless insect life makes a Silence which is not fearful, and the keen-perfumed wind flows thru it all in softer, sweeter tones and stronger than ever dripped from carven organ tubes. ¶ To all of us some of the time and to some of us all of the time it is a forest of long leaf yellow pine. ¶ For the rest it is the Greatest Cathedral, the Original of all the copies.

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BE TRUE TO YOURSELF AND YOUR JOB especially when the Boss comes to work with last night's late supper festering within his soul. ¶ A man eating rarebit will often become as peevish as a man-eating tiger, vibrating unrestfulness all over the office force on the morning after. ¶ But you need unwind no uneasiness so long as you continue to concentrate on that Cosmic Uplift which is comprised within the limits of your day's work. ¶ When the Boss signifies his conviction that you were born a fool and have continued ever immune to the bacilli of hossence, remember that 'tis the voice of the rarebit you hear and reply in silence. ¶ He who answers a delayed digestion is twice a fool: first in that he affronts his own dignity and second in that he riles up the rarebit even worse than before. ¶ Leave it to the digestive juices, and they will eventually make the Boss more ashamed of his puerile peevishness than could all your indignant eloquence. ¶ And don't sulk, for the love of Hygeia or Heaven—which are often synonymous! ¶ Just before the devil had exhausted his ingenuity in making humans inefficiently unhappy he invented the Sulks. ¶ After which he curled his tail around his nose and went to sleep:—he had shot his bolt, capt the climax, put a period to profanity! ¶ A sulky man is about ten per cent as useful and decorative as a blue china cat after it has fallen out of the fourth floor window onto a concrete sidewalk. ¶ He is all ready to be swept up. ¶ And a Boss with nightmare germs beneath his belt is the very one to do the sweeping. ¶ But, seriously, when you go to work for a man remember that, being human, he will have to wrestle with the willies once in awhile—and that the audience is most apt to get pasted. ¶ Dont let down on him, even in thot, until you are all ready to quit. ¶ And then take yourself alone into the silence before you quit. ¶ If you still want to quit after you come out, go ahead and help the firm just that way. ¶ Because the loss of a boob who loses his loyalty everytime anyone but himself grows a grouch on general principles, is a great gain to any house worth working for.

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¶ THE HUMAN BODY is its own Recording Angel: as they are committed, Sins are registered among the tissues of the body and Retribution begins instantly.

¶ The value of a man is more a matter of sense than dollars.

SIXTH SESSION

Pacific Logging Congress

HELD AT BELLINGHAM, WASHINGTON
AND DESCRIBED FOR STEAM MACHINERY
by
S. MacHinery

HEAVEN alone knows how far it is from Duluth to Vancouver; and this is Heaven's busiest season, when she is receiving about a billion new boarders a minute.

We need not expect exact information from any such source, therefore and MacHinery must needs guess, it at a ton of miles weighing one to the pound.

It took from Saturday night till Wednesday morning to get there, rambling through the Rockies on the Canadian Pacific Railroadway.

Passing through the Gap, gateway to the Rocky Range, about ten on Tuesday morning, we continued to aspire ever higher until along towards evening, when came the inevitable reaction and we dropped down towards Donald and Beavermouth, in the shadow of the Selkirks.

All the rest of that day and all night long we swished through the solemn Selkirks and crashed through the Cascades, vanquishing the last mile before Vancouver at ten on Wednesday morning.

Vancouver, the Victorious, lies on English Bay; but tells the truth about her population, placing it around the hundred thousand mark.

Now English Bay is a bit of Burrard Inlet which is a gob of Georgia Strait which is a piece of Puget Sound which is a dent in the West Coast of America, filled with Pacific Ocean.

So it becomes obvious that Vancouver is a Pacific Coast city and liable to attack from His Imperial Majesty's cruiser Leipzig, were it not for His Britannic Majesty's ship Rainbow. (See daily papers for particulars.)

Which is more, Vancouver, contains the famous firm of Taylor & Young, which enables the contractors of this Canadian coast to come upon Clyde equipment when they so desire. Also it creates said desire.

Vancouver contains a Commercial Club which would be an exclamation point in a city seven times her size; but Britons always create their clubs more conscientiously then we do. They build for Thursday week where we build for tomorrow night.

But this has nothing to do with the Sixth Session of the Pacific Logging Congress which came we out for to see. —Let us on to Bellingham, the beautiful and the boostful, where, even now, the Bunch is coagulating into clots!

Perched above Puget Sound in the heart of Whatcom County, Bellingham is the home of thirty thousand folk, several hundred Fords, a number of automobiles, the Hotel Leopold and the Bloedel Donovan Lumber Mills.

Behold us then, in the evening of August twenty-seventh, descending from one of the said Fords at the doors of the said Hotel Leopold and bursting in upon the sixth P. L. C. in course of construction!

After the consternation had calmed down and the police-force had been reassured and had returned to his home, we exhumed Whisnant of the Timberwolf and persuaded him to introduce us properly to the Congress, which he proceeded to do with absolutely aplomb and things.

Particularly, we met George Cornwall, guiding spirit of the Timberman and father of the Pacific Logging Congress, gleaning from him in a few golden moments, much priceless information about Pacific Coast conditions on which we were almost less than ignorant before. Now we are almost a Expert.

Also we gleaned a dull crimson badge bearing the superscription of the Sixth Congress in letters of glittering gold, which George pinned upon our suit of clothes.

The nameplate above the badge bore the single word "PRESS" and this subjected us to some inconvenience at the hands of the Official Tailor who took it entirely too literally.

We succeeded in staving him off until bedtime however.

And so the sun rose upon the morning of the First Day; and we with him, clad in our Press badge and our pressed suit.

THURSDAY, AUGUST 27TH.

AND THE DOINGS OF THE P. L. C. THEREON

THE success of any convention depends, to a very great extent, upon the genius of its presiding officer, and the success of the Sixth Session was practically assured when President Donovan stepped upon the stage of his own Grand Theatre and gave the go-ahead signal, on a logger's steam telegraph whistle.

Some presidents become such because of a split in the party, some because it is their turn and some because they are born for the job. This last class reaches its Zenith in President Donovan of the P. L. C.

A born leader of men in a land of leaders, he has been the Benevolent Boss of Bellingham for more than a quarter of a century.

He was the original Chief Engineer on all three railroads running out of Bellingham, continuing as a railroad civil engineer until eight years ago,

Hotel Leopold at Bellingham.

when he became Vice President of the Bloedel Donovan Lumber Mills.

Since then he has guided the logging destinies of these mills with F. L. Housley as his able aide-de-camp at Alger, continually supplying sufficient logs to run the Rail Mills at Larson with their daily output of a quarter of a million feet of lumber and four hundred thousand shingles and the export mill on the Bellingham water-front with its daily capacity of three hundred thousand feet.

In the absence of the President at the Fifth Congress, he presided in his capacity of Vice-President and carried the Congress forward with such splendid ability that he was unanimously and enthusiastically elected to preside over its destinies in nineteen fourteen.

Possessed of a calm, forceful personality, a wonderfully alert mind and an eloquent tongue, added to a commanding knowledge of his chosen profession, President Donovan impressed himself on S. MacHinery as the only perfect presiding officer he has ever known.

Conceive you then this paragon among presidents, whose picture is on the following page, stepping forward through the forest stage-setting under the Welcome banner and addressing these words to quarter of a thousand loggers:

PRESIDENT DONOVAN'S ADDRESS

"This is the sixth annual meeting of the Pacific Logging Congress. Organized at Seattle, at the time of the Alaska-Yukon Exhibition by E. P. Blake, Geo. M. Cornwall and a few other enthusiasts, it has proved a rallying point for men engaged in the great logging industry and annually calls them together from Montana, Idaho, Washington, Oregon and British Columbia, for an exchange of ideas and the promotion of good-will. There are many present who have attended all the congresses from the beginning. I have personally missed one, that at Vancouver, to my great regret, but Seattle, Vancouver, Portland, Tacoma are names to conjure with in the vocabulary of all good lumbermen.

"We do not come to form trusts, nor even to talk trade conditions except privately. Our sessions are given to consideration of improvements in machinery, of conservation of men, of betterments in conditions, so that there shall be economy in life, limb and equipment in future work.

"In most trades there is a certain secretiveness, a desire to control and conceal processes, for personal gain. Freedom from this has been one of the most marked characteristics of our meetings. The man who has solved a special problem, who has found some new, safe or effective way of doing his work, has been anxious to give his neighbor the benefit of his experience. The result is that the record of the past five congresses is a library of knowledge contributed by the brainiest and best men in our profession and most creditable to their broadness and generosity of mind.

"Much time has been given by many men to the preparation of papers with drawings and models solely that other men engaged in the same line of work might profit without expense by these experiences. The application of steam, gasoline, air and electricity, of cableways and skidders to the handling of logs is comparatively recent and the last word has not yet been said in the application of any of these powers. For the great trees west of the Cascades and Sierras in British Columbia, Washington, Oregon and California, logging is distinctly an engineering proposition. Logs weighing twenty tons are not uncommon and to transport such logs from the stump to the mill-pond over ridges, across ravines and from elevations of fifteen hundred feet or more, requires trained intelligence of high order.

"The main function of this congress is to develop such intelligence by the exchange of ideas among the practical men from the woods who come here and by the teaching of principles and their practical application in the various forestry schools which are now established in the districts interested. Our secretary will give a comprehensive review of the condition of this work in his address, which follows. I cannot refrain, however, from expressing my approval of the practical instruction being given in the College of Forestry of the University of Washington under Dr. Winkenwerder. Other schools doubtless are doing well, but this one has come under my personal observations.

"At our session in Spokane last year, we had a surfeit of good things. Twenty-nine papers were presented in two days and were printed in the record but full discussion was impossible and some disappointment resulted. We have only half the numbers on this year's program and I desire full expression from the members of the Congress as the various subjects are presented. The consideration of improved living conditions, greater safety, and the development of industrial insurance and

hospital care have had full share of attention at past meetings. Important papers will be given by qualified men on several of these topics at this Congress.

"There has been some effort toward developing an exhibit of logging tools, engines and appliances in connection with the Congress. Such exhibits were seen at Seattle as part of the Alaska-Yukon Exhibition and, as you are aware, a considerable exhibit was made at Tacoma. With the exception of one or two specialties, none was made at Spokane, nor here.

"It was agreed at Spokane that next year's Congress should be held at Eureka, California. It is for you to confirm this. If so held, we may expect to see a fine exhibit in San Francisco. It seems hardly practicable, with our limited time, to have such an exhibit as would be creditable at every Congress. To lengthen the congress would probably lessen the attendance.

"We now welcome every person interested in logging and its scientific development who signs our constitution and pays the dues, to discuss and frame our policies for the future.

"We welcome all who have come to this congress and ask you to give full and free expression to your ideas on the various subjects that will be presented.

"I especially welcome you to Bellingham, the fourth city of the state, the educational and commercial center of Northwest Washington, a city which is headquarters for lumber, fish, cement and agriculture and which boasts a greater number of homes owned by workmen in proportion to population than any other city in the United States.

"The sixth Pacific Logging Congress is now open."

Amid enthusiastic applause, testifying in unmistakable terms to his personal popularity, President Donovan concluded his address and assigned the floor to Secretary George M. Cornwall, paternal progenitor of the P. L. C.

It is by no means our intention to reproduce in full all the splendid papers given at this Congress.

Rather, we will cull from each that which seems of greatest value to our own readers, leaving the Official Report to tell the tale in toto.

But Secretary Cornwall's address is so complete and concise that it covers the scope of this Sixth Session

even as we would wish to sketch it for you had we the ability.

And so we hand it to you unevaporated, just as it gushed form his own lips.

SECRETARY CORNWALL'S ADDRESS

"Since the last session of the Logging Congress, it is encouraging to record the steady forward steps which have been taken by the states of California, Idaho, Montana, Oregon, Washington and the province of British Columbia toward providing educational instruction in logging engineering. There is a growing sentiment in the territory embraced by the Congress that there is a real need for practical education along the lines of logging engineering. In attempting to provide special courses in connection with the various colleges, the problem of how to blend the intensely practical and the theoretical has been given much consideration. In the evolutionary process that has been going forward, which must necessarily be slow, there has been a sincere realization by the faculty that the teaching of theoretical forestry would never, in itself, equip young men to adequately undertake the arduous duties and requirements of modern logging practice. In fact, it is almost hopeless for a young man without practical training to even attempt to offer his services in such an intensely practical field of human endeavor.

"It is the supreme object of the Congress to help direct and mould the form of instruction in order that the young man be trained along lines that will insure him the same relative position as that of students of the Boston School of Technology and other schools of like character, where in most instances, their services are engaged in advance of graduation.

"Now how to bring about a similar condition in the education of the students in logging engineering, is the problem that this Congress must face, and to whose solution it must direct its energies. Let us see what progress has been made along these lines.

MONTANA

"The legislature of Montana made an appropriation at its last session for the furtherance of forestry instruction at the University of Mon-

tana. This winter will see a course in logging engineering established under a very capable logging engineer and it is reasonable to expect that Montana will produce her quota of trained men for the logging and lumber industry.

IDAHO

"The department of forestry in the University of Idaho have been constantly pushing forward their researches in laboratory work in attempting to evolve some practical means for utilization of by-products and strengthening their courses in general forestry instruction.

WASHINGTON

"The University of Washington was the pioneer school of the West in devoting its attention to logging engineering courses. The results that have been obtained have been highly creditable. Some of its graduates are occupying important positions in practical logging operations. The lumbermen of the state of Washington co-operated in helping direct the course of study which has been appreciated by the faculty.

OREGON

"The Oregon Agricultural College is providing for a more comprehensive course of study in logging engineering. It is anticipated that a building for forestry and logging engineering instruction will be provided during the coming year. The school of forestry has also been the recipient of the heartiest co-operation of the logging and lumbering interests. A bill has recently passed Congress, through the efforts of Governor West, which provides for an exchange of 50,000 acres of scattered state timber lands for a compact body in the Santiam National Forest which can be used as a basis for conducting practical logging operations and forest instruction with the Oregon Agricultural College.

CALIFORNIA

"A modest appropriation was secured from the last legislature in behalf of the extension of forestry work at the University of California. The courses in forestry have been strengthened by additions to its faculty. Under the law empowering the purchase of an experimental farm, the law provided that three-year courses in various departments of industry may be given to all male citizens of the state, over eighteen years of age. Admission to these courses is not contingent upon any literary examination. Courses in blacksmithing, machine-shop practice, woodworking, steam and electrical engineering will be included in the courses and it is expected that it may be possible through this means of rendering efficient aid in rounding out likely young men who desire to take some of these special branches in connection with logging engineering. There was also a move made to create a branch forest school in the redwood belt, where practical instruction in forestry work could be carried forward. It is hoped this idea may be consummated.

BRITISH COLUMBIA

"In British Columbia the logging and lumber interests are co-operating with the moving spirits of the new university to be established at Point Grey and it is anticipated that adequate provision will be made for teaching forestry and logging at the new British Columbia University. The lumber industry of that province has always been loyal supporters of the cause of logging engineering.

CO-OPERATION OF LUMBERMEN

"It is absolutely essential that the logging and lumber interests co-operate with the educational institutions of the various sections, in order that the most practical form of forestry and logging engineering instruction be provided. The schools have evinced a most earnest desire to help shape their courses along practical lines and it only requires the advice and support of the lumber industry to render these schools mighty effective forces in turning out young men fitted for logging engineering work. It is extremely pleasing to note the steady advances that have been made in practical forestry instruction which can be regarded as an omen of good will existing between the various educational institutions and the Logging Congress in its efforts to standardize the profession of logging engineering.

"Go and visit the colleges occasionally. Ask the faculty to visit your camps. The intercourse will help wonderfully in each seeing the other's viewpoint. School courses are largely theoretical by reason of the failure of the practical men to help construct them. Here is your

BLOEDEL DONOVAN LUMBER MILLS
EXPORT MILL ON WATERFRONT AT—
BELLINGHAM, WASH.
CAPACITY 300 M FT. IN TEN HOURS
BLOEDEL DONOVAN LUMBER MILLS
RAIL PLANT AT LARSON STATION, BELLINGHAM, WASHINGTON
TWO SAW-MILLS TWO SHINGLE MILLS TWO LATH MILLS ONE PLANING-MILL

opportunity to stamp indelibly the genius of your profession on the educational institutions of your state or province.

AMERICAN SCHOOL OF LOGGING ENGINEERING

"In this connection it may be stated that in order to insure the highest possible efficiency in a logging engineering school, it may be found advisable for the various states and the province of British Columbia, to join forces and create one school where the science of logging engineering may be developed under practical instructors. The chair of lumbering in Yale University was endowed by the lumber interests of the United States very largely, both by personal contribution and otherwise. If the lumbermen of the United States deemed it a worthy cause to endow a chair of forestry at Yale, why should it not be regarded as equally appropriate and worthy for the lumber interests to endow with sufficient funds a school of logging engineering? The Pacific Coast is the logical place for the establisment of the American School of Logging Engineering. More than one-half of the standing timber on the North American Continent, estimated at 1,600 billion feet, is located in the province of British Columbia, the States of Montana, Idaho, Washington, Oregon and California; and the physical conditions surrounding its removal demand the highest type of logging engineering skill.

"It would take a comparatively large endowment fund to establish a school along similar lines of the Boston School of Technology but the lumber industry owes it to itself to create a National school of this character. It would yield a large dividend to the industry, through the increased efficiency in logging.

CABLE TRAMWAYS FOR LOGGING PURPOSES

"During the year considerable progress has been made along the line of cable tram transportation, following the success that attended the Potlatch Lumber Co.'s efforts. In British Columbia, the Powell River Co., have been making some experiments on Tournur Island. Bloedel, Stewart & Welch have also been experimenting with a cable tramway system, which embraces some new features in the plan of supporting the line and the type of carrier which negotiates the necesary obstructions. The three systems of tramway transportation are constructed with the idea of supplementing railroads in the particular field of their operation. Papers depicting some of these ideas will be delivered at this Congress.

INCLINED RAILWAYS

"Since the last Congress, the camp of the Manley-Moore Lumber Co., Fairfax, Washington, has been provided with a lowering system similar to that employed by the Yosemite Lumber Company of Merced, California. The Ebey Logging Company, of Arlington, Washington, have in successful operation a new and novel log lowering system which will be fully described by its inventor and builder, H. W. Sessoms.

OVERHEAD YARDING SYSTEMS

"There has been a steady movement throughout the year for the utilization of various types of overhead systems for log transportation, more in the nature of yarding devices. There is undoubtedly a

strong tendency towards the idea of getting away from surface haulage, and elevating the log at least partially, thereby reducing the friction and enabling delivery of the timber without the necessity of plowing up the surface of the earth, with the blunt-ended log.

FALLING SAWS

"Some progress may be recorded towards the idea of falling timber with the assistance of a mechanically driven saw, the motive power being supplied by steam or electricity.

SUPERHEATER FOR DONKEY BOILERS

"The Eastern and Western Lumber Company of Portland, in their camp at Kelso have equipped one of their donkey engines with a superheater and an independent pump to provide heated feed water for the boiler—which has yielded good results. This is the first time probably that any effort has been made looking to the reduction of the cost of fuel and the easier maintenance of a steam supply by means of a superheated water system on logging engines. This system has been employed regularly on practically every other form of steam generator. It will be interesting to note developments along this line.

FUEL OIL

"The use of fuel oil, both in locomotive and logging service, is steadily increasing. The developments in the application of the use of oil have been mainly confined to working out and perfecting the details of the idea, rather than any marked innovation in method. Through the natural development of its application, a more economic use has been attained. This subject will be fully presented and discussed at this session.

FOOTBOARD ON LOGGING TRUCKS

"Measures will probably be introduced in the legislatures of the Northwestern states looking to compelling the addition of a footboard on detached logging trucks. It would be in order that this Congress should appoint a committee to investigate the feasibility of this idea, and make such recommendations to the legislatures and to the various manufacturers of logging trucks as may be deemed proper along this line. If there is anything that can be done to reduce the hazards incidental to logging, it is not only the aim but the duty of this Congress to investigate and, if possible, remove any unnecessary cause of accidents. In this connection it will be interesting to hear reports from representative loggers, who have inaugurated a system of camp rules, with a view of reducing accidents. This subject will be treated at length and should produce some very live discussion.

BONUS SYSTEMS

"At the Spokane Congress the subject of a bonus system and its application to the logging business was submitted. The discussion that it aroused showed the wide spread interest taken in this subject. There is undoubtedly a rapidly growing sentiment in the various forms of industry that, where it is possible to devise some direct plan of participation by the workers in the returns from industry, it should be undertaken. The Congress is fortunate in having secured several speakers who have in successful operation bonus systems in their camps and will discuss the results.

PHYSICAL EFFICIENCY

"Physical efficiency is coming more and more to be recognized as a most potent factor in the success of any operation. The health of the men is of vital and prime importance to every industry. Each session the Congress has devoted considerable attention to this question and it is with a feeling of pardonable pride that there can be noted a marked change in the attitude of loggers generally towards this subject. Dr. Kelly, commissioner of the Board of Health of the State of Washington, has kindly consented to address the Congress on this subject.

WELFARE WORK IN CAMPS

"Through the instrumentality of the industrial branch of the Y. M. C. A. considerable progress has been made along the lines of providing means of recreation and general uplift work among the men in the woods. The Welfare Dinner will be given tonight and it is hoped that there will be a large attendance. Speakers will briefly outline the success which has followed the efforts in the direction of general welfare work.

COMPENSATION ACTS

"The Logging Congress has always been a firm advocate of automatic workmen's compensation. It is pleasing to note since the last Congress that the state of Oregon has passed an elective workmen's compensation act, and the state of California has also enacted a compulsory act. The California compensation act is an amplification of the Roseberry liability and compensation law. Workmen's compensation in the state of Idaho was defeated at the last session by a single vote in the senate. A committee was appointed by the governor of the state to draft a bill which will be submitted to the forthcoming legislature. In the state of Montana the labor unions have initiated a workmen's compensation act similar to that of the state of Washington but which increases the compensation about 50%. In British Columbia a commission has been making an investigation and will report a bill to the next session of the legislature. In Washington a first-aid clause has been initiated and will probably be submitted at the election in November. Workmen's automatic compensation as an integral part of industrial life is here to stay. An address setting forth the features of the Washington compensation act will be one of the features of this Congress.

RIGHT OF WAY LEGISLATION

"The states of Washington and Oregon, at the last sessions of the legislatures, have each passed two important right of way bills. The Washington act provides for the condemnation of private property for logging railroads, without the necessity of assuming the responsibilities incident to common carriers, on the theory that logging railroads are highways of necessity. The supreme court of the state of Washington, in an unamious opinion, upheld the constitutionality of the act. In the state of Oregon a law similar to the statute now in force in the state of Washington also held constitutional by the Washington supreme court, was adopted. Under the provisions of this act, logging railroads may condemn private property but must assume the responsibilities of limited common carriers for timber and timber products.

COMPULSORY MANUAL TRAINING

"There is a steady and growing conception in the minds of practical men that the present methods of education are not producing practi-

AMONG THE CANADIAN ROCKIES

cal results. As a consequence, there is a consistent effort being made towards compulsory manual training in the public schools. This is a most essential and desirable development of the manual training idea. There is no industry in the world that is susceptible of greater benefits from mechanical training than the lumber industry. Aside and apart from any special advantages that might accrue to the lumber industry as a whole, the Pacific Logging Congress, as the exponent of practical ideas, should go on record emphatically in favor of manual training, especially in the grammar grades. France, Germany and other European countries have found it desirable to enforce military training and there is no reason why the United States should not become the great industrial nation of the world through the medium of the public schools. Manual training is the key to the "back to the country" movement. The boy who cannot fit a rafter and thread a piece of pipe is sorely handicapped in his effort to start life in the country.

AMERICAN SOCIETY OF LOGGING ENGINEERS

"Tentative steps were taken at the Spokane meeting towards the formation of the American Society of Logging Engineers and it is to be hoped that at this session definite action will be taken towards the formation of this society. It may be interesting to note that recently there has been organized the American Society of Agricultural Engineers, which will hold a session in Chicago next December. There is every reason why logging engineers should take steps to form a society along similar lines to those of other engineering societies.

ABSENT BUT UNFORGOTTEN

"Since the last session of the Congress Wesley E. Wells, Manager of the Somers Lumber Company, Somers, Montana, and a former officer of this body, has passed over. A committee should be appointed to draft suitable resolutions paying tribute to his sterling merit. The world is better that Wesley E. Wells lived.

CONGRESS IN FOREIGN LANDS

"The influence of the Pacific Logging Congress is world-wide. Copies of the report of each session are mailed regularly to the various countries where lumber is manufactured, including Siberia, Australia, New Zealand, the Philippines, South and Central America, Africa and Europe. Thus the seeds of higher logging methods have been scattered broadcast throughout the world, giving the Congress a sphere of influence far greater than was contemplated at its inception. The Southern Logging Association of which James Boyd, Editor of the Lumber Trade Journal, New Orleans, is secretary, is a child of the Pacific Logging Congress and holds annual sessions in the Southern states with excellent fruits. In the North Lake states a movement has been started looking to the formation of a similar organization.

STANDARDIZATION OF LOGGING ENGINES AND TOOLS

"A committee was appointed at the Spokane session to further consider the standardization of logging tools. A committee was also appointed to promote the standardization of logging engines. Both of these committees are to report at this session.

CUT-OVER LANDS

"The Congress will hear an address on the subject of cut-over lands, and their possible utilization. This is a subject that is of interest to every logging operator as it tends to carry forward an intelligent plan for the natural sequence that the plow should follow the axe. Some legislation should be devised looking to the alienation of cut-over lands to the state, so as to insure the fullest use of the denuded areas. Lands that are susceptible of cultivation should be sold to the home-builders on long terms and low interest charges by the state, while the rough, broken, mountainous land should be used for growing trees. The state of Washington at the last session of its legislature provided legislation whereby owners of cut-over lands may form associations similar to the dyking and irrigation organizations with a view of being able to secure funds with which to clear stump land. Similar legislation should be enacted in the various states, and it would be worthy of the Congress to give this subject consideration.

VISITS TO VARIOUS CAMPS

"Provision has been made, as will be noted by the program, for visitors who desire to visit camps where may be witnessed the various logging systems. These invitations will doubtless be accepted by many. It is hoped by this plan that visitors

to the Congress may be enabled to see at first hand the practical operation of the various systems discussed at the Congress.

CO-OPERATION IN LOGGING CONGRESS PROGRAM

"The secretary desires to extend his sincere thanks to all the members and other gentlemen who have favored the Congress with papers. It requires a considerable sacrifice of time and effort to prepare and present their ideas on the various subjects which I feel is heartily appreciated. The Pacific Logging Congress is unique in its organization. It depends entirely for its success on the loyalty and participation of its friends and members in making up its program; and, judging by the splendid attendance, this loyalty and spirit of co-operation becomes more munificent with each succeeding Congress.

CONCLUSION

"The deep interest manifested in the Congress, as shown by increases in membership, indicates that it fills a distinct place in the lumber industry; and as the years roll by its sphere of influence and usefulness increases. It is not only a clearing-house of ideas, but furnishes an annual outing for many loggers. It is to be sincerely hoped that each member will feel it incumbent upon him to do what he can to induce others to join."

Now after Secretary Cornwall had made an end of this able summing-up of the Sixth Congress, there came a call for T. P. Jones of the Potlatch Lumber Company to read a paper on his overhead logging system.

Unfortunately, however, the fiercest forest fires ever known in Idaho were raging at the time and neither Mr. Jones nor any other representative of the Poltatch people was able to be present. It was said that no less than a thousand fire-fighters were doing battle about Bovill while the Congress gathered.

R. W. Vinnedge of the North Bend Lumber Company at Edgwick, Washington, stepped into the breach with an able paper on the North Bend System.

After a thorough description of this skyline system, which is admirably adapted to the logging of isolated timber on steep logging chances, Mr. Vinnedge concluded

with a plea for greater accuracy in cost-accounting, saying, in part:

"A uniform and comprehensive system of cost accounting is one of the urgent needs of the industry.

"Every operation has a certain standard or 'possible' based entirely upon efficiency.

"Efficiency, mechanically defined, means 'the ratio of useful work to energy expended' which for the purpose of my argument may be worked over to the 'the ratio of results obtained to money expended.'

"When a man tells me he is getting out logs for so much on cars, unless he furnishes some explanation as to how he arrives at his costs, the statement is meaningless for comparative purposes, and, be it said, a cost sheet is mainly valuable only in so far as it enables me to compare, say July operations with June, this year with last, or my cost with yours.

"In order that you and I may compare costs intelligently, we must have a similar method of computing them; if your yarding item shows 80 cents and mine $1.00 I must know where I am deficient.

"I now come to my point: I am going to reproduce here our logging costs for the years 1912 and 1913; not because I consider them wonderful, but because I feel you may be interested in noting our segregations and further, because I feel they will assist me in explaining why I consider the "North Bend" system a success:

Labor—	1912	1913
Supervision	$ .18	$ .25
Falling	.22	.25
Bucking	.36	.36
Tarding	.86	.93
Loading	.19	.28
Miscellaneous	.05	.09
Landings	.11	.06
	$1.97	$2.22
Material—		
Wire	$ .13	$ .13
Tools	.02	.07
Supplies	.04	.08
Donkey Repairs	.17	.13
Shop Work	.09	.08
Miscellaneous	.02	.01
	$ .47	$ .50
Logging Spurs	$ .32	$ .25
General Items—		
General Expense	$ .15	$ .15
Liability Insurance	.03	.03
Interest and Taxes	.22	.20
Depreciation	.02	.04
	$ .42	$ .42
Total	$3.18	$3.39

"I might add that 1912 represents

ground-yarding on low levels with large timber, while 1913 represents sky-line operations on high levels, much of it steep side-hills, and timber averaging about 350 feet to the log.

"Therefore, nowithstanding the fact that the ground yarding costs show more favorably at first glance, nevertheless, had we employed any but overhead methods on the small timber, our costs would have been prohibitive.

"These costs can be lowered: undoubtedly some of you are logging for less with your overhead systems even now; but I believe we shall all be able to reduce our costs with consistent effort bent toward the perfecting of the details of overhead as well as ground yarding operations and I feel sure we shall all profit by an exchange of ideas in this Congress.

"No one system or man will bring about this result, nor will it be accomplished in a short space of time, but a blend, a grand composite of the best will ultimately triumph.

"A few words from Ruskin seem to me to apply here quite fittingly:

"All the best things and treasures of this world are not to be produced each generation for itself, but we are all intended not to carve our work in snow that will melt, but each and every one of us to be continually rolling a great white gathering snow ball, higher and higher, larger and larger, along the Alps of human power."

Mr. Vinnedge had already garnished his remarks with quotations from Emerson and others of the great philosophers, and President Donovan commented on the seeming incongruity of this in a logger. He pointed it as an example of the growth in general greymatter which has signalized the advent of modern logging engineers to surplant premechanical log-luggers. Men must do the thinking for their machines which may have everything but a brain. So the logging engineer gets the habit of agitating his greymatter until he comes to crave mental excitation. Once arrived at this pass, his evening hours offer the Thinkers of old an excellent opportunity to get back and live all over again in his think-hatchery. But all this is beside the point.

Now after Mr. Vinnedge, James O'Hearne of the English Lumber Company at Mt. Vernon, Washington, was scheduled to carry overhead logging sytem stuff a little further into the fields of thought.

But first President Donovan invited one Hayes, a tramway engineer of San Francisco, to tell the bunch about the Jones idea in intermediate types of tramways.

This Mr. Hayes proceeded to do with eloquent clarity, particularly bringing out the point that logs were never raised entirely from the ground except in skidding uphill.

He illustrated his various points with diagrams drawn on a big blackboard which dominated the stage—and the audience.

Right here we have an Idea for the S. L. A. since it is often difficult to make a mechanical point clear without the aid of ocular evidence.

Blueprints, drawings and giant photos were also pinned to this board from time to time so that it was made to contribute materially to the success of the Congress.

Mr. O'Hearne then gave a brief and interesting account of a temporary overhead method used by his company for a particularly difficult chance. He stated that he could not recommend the system to anyone, since they themselves used it only when forced to, and we must allow him to be the best judge of the case.

Eight people were scheduled to take part in a discussion on these overhead logging systems but fate and forest fires kept all but three from being present.

Taylor of Tacoma read a paper on the use of a swing boom loader as his contribution to the cause.

Then came F. C. Riley of Bloedel, Stewart & Welch, Ltd., followed by one Lally, substituting for J. D. Sparland of the Lytle Logging Company.

After these, although the morning program was but half finished, it became necessary to call a halt while the Congress went out and maimed a flock of food.

After dinner it occurred to S. MacHinery that the loggers might profit more if they were able to make notes from the various papers as they were presented.

He therefore went and dug up Jim Meany of the Clyde Iron Works and persuaded him to hand out some hundreds of the now famous Clyde memorandum books.

S. MacHinery swiped one in payment for his services as assistant hander-out and, on close and careful examination, proclaims it the most useful and costly souvenir he ever stole.

It is made of mission calf—the kind that wears forever and a day longer,—and has a tooled design on the cover. A dollar plus a half will never buy a duplicate in any leather-

goods store in these Neutral States of Samerica.

It was needful however, in handing out these books, to stay beside the door until the last delegate had done his dinner and returned to the theatre of discussion.

Hence MacHinery missed the remaining papers postponed from the forenoon, arriving just in time for the beginning of the regular afternoon program.

The missed papers dealt particularly with Pacific Coast problems however, and we are reporting this largely in the interest of our Southern readers, who have never attended one of these great Pacific Coast meetings. So, you see, the loss was ours and not yours; and we feel well repaid by the special opportunity to personally meet so many members of this great modern profession of logging engineering.

The regular afternoon session started with an able paper on yarding (which corresponds to skidding) and loading, read by J. P. Van Orsdel of the Portland Lumber Company of Portland, Oregon.

Mr. Van Orsdel handled this big and complex subject in a masterly way, giving a most complete resume of Pacific Coast practice.

Admirably condensed as it was, this paper ran into some twenty-five hundred words and since it dealt with timber running up to two hundred thousand feet to the acre,—taking twenty thousand as the absolute minumum,—it might interest but could scarcely instruct our Southern friends.

We reluctantly resign it to the Pacific Coast papers, therefore, since our space is limited and there are other matters more pertinent to our Southern conditions, which, alone, will fill it to the point of maximum stress.

For example, the next paper to be presented was one by A. H. Powers of the Smith-Powers Logging Company of Marshfield, Oregon.

Mr. Powers dealt with accident prevention in the woods, a subject of vital interest to all engaged in the great industry of logging.

He gave an amirable set of rules, adopted by his company, which has been found to be of the greatest possible value in reducing accidents, by eliminating carelessness and checking thoughtlessness on the part of employees.

Steam Machinery will reproduce these rules in full, in an early issue with the mental suggestion that they be reprinted and distributed to the employees of all logging companies who have the best interests of their men (and therefore of themselves) at heart.

After a brief discussion of Mr. Powers paper, in which Mr. Reed of the Hammond Lumber Company, Mr. Young of Inman-Poulsen and Mr. McNaughton of the Canadian Western Lumber Company took part, H. R. McMillan, Chief Forester of British Columbia, read an able digest of the new Forest regulations in that province.

The Congress then adjourned for the day and was immediately swept up by the auto-owners of Bellingham to be taken over the city.

Eighty-four cars were required to carry the crowd, but it was noticeable that nearly as many again were ready for use if needed:—which forcefully testifies to the prosperity and hospitality of Bellingham!

The evening of Thursday the twenty-seventh was given over to a Welfare Dinner under the auspices of J. A. Goodell, Northwest Industrial Secretary of the Y. M. C. A.

John R. Toole of Missoula, Montana, presided at this dinner, turning it over to Mr. Goodell after a few words of heartiest commendation for the welfare work, which words were ably seconded by J. D. Young of the Inman-Poulsen Logging Company.

Mr. Goodell immediately plunged the hall into Stygian blackness and proceeded to show a series of steriоptican views of good and bad camp conditions in and about the coast.

Later, Jim Lansbury, sky-pilot of Bovill, told us something of the way he helps the men to help themselves.

The Y. M. C. A. is doing a splendid and incalculably valuable work among the loggers everywhere. We have bribed an enthusiast to tell us all about it in a paper which will be published in Steam Machinery shortly, and we assure you that it will well reward the reader of it.

Midnight brought the Welfare Dinner to a close and S. MacHinery lost no time in hitting the hay to recuperate for a strenuous morrow.

FRIDAY, AUGUST 28TH

AND THE CONTINUED DOINGS OF THE P. L. C.

THE Friday morning session started with a paper on profit-sharing delivered by W. W. Peed of the Hammond Lumber Company, which said company has its habitat

in the probable place of meeting for the Seventh Congress,—Eureka, California.

Mr. Peed's company believes in extra payment for extra effort as an inducement to employees to develop their full capacity, and the plan seems to work well.

A regular day's work is based upon exhaustive analysis of former costs in each line and a proportionate bonus is paid for all above that amount.

Much the same plan is followed both by H. Syverson of the Nisqually Logging Company and by J. D. Young of Inman Poulsen who followed Mr. Peed with remarks on the same subject.

Admirable results seem to follow the adoption of a bonus system in all cases where a fair and equitable one has been arrived at, particularly where the bonus is based upon the work of the entire crew in any subdivision of the logging operation. In such cases it is to the interest of each man in the crew to see that every one does his full share towards swelling the monthly bonus. Malingerers are usually severely dealt with by the men themselves. Where the bonus is based on a full month's work it has the further effect of holding the men longer, enabling them to arrive at even greater efficiency through constant practice in the same line of endeavor.

H. P. Holmes of the Western Pine Lumber Company of Klickitat, Washington, followed with a brief paper descriptive of a system of lowering logs on steep grades which was also covered in an article in the July issue of the Timberman.

After Holmes, Floyd L. Daggett, Chairman of the Washington Industrial Insurance Commission gave an interesting account of the workings of Workmen's Compensation Legislation in that state.

The Finance, Resolution and Nomination Committees then rendered their reports, all of which were accepted in their entirety by the Congress.

President Donovan, Secretary Cornwall, and all other officers were re-elected to succeed themselves; after which, among the enthusiasm, MacHinery closed the forenoon session by beating it to a bean-hatchery for lunch.

The final session of the Sixth Congress opened with an address by Dr. Eugene R. Kelly, Commissioner of the Washington Board of Health. The Doctor's subject was Camp Sanitation and he made a very strenuous plea for better camp conditions, particularly with regard to the sanitary disposal of all forms of camp waste, and the careful safe-guarding of the camp water supply. He pointed out the money value of careful camp sanitation and remarked that often the best appearing camps were the most negligent in this respect. One particular case he cited of a camp with fine bunk houses and a good Welfare Building in which the well for the camp water supply, a cess-pool and a toilet were all located within a few yards of each other. His assistant who discovered this condition, asked the manager of the company in question why he had gone to the expense of digging three holes when one would have served as well! The doctor closed with a plea for first-aid training among camp foremen, representing that a little knowledge intelligently applied at the right time often forestalled major surgical operations,—and big damage suits.

C. W. Buckner of the Westholme Lumber Company, of Westholme, B. C. followed with a paper on the practical workings of camp sanitation which bore out all the doctor had said.

Two papers on logging with electricity, by Andrew Bloom and E. J. Barry, brought the Congress to a consideration of land after logging.

An able paper on this subject was presented by B. W. Hoveland of the Atlas Shingle and Lumber Company of McMurray, Washington, in which he dealt with the methods of making cut-over land pay its way while the work of clearing progressed. This paper, which is interesting to all owners of logged-off lands, follows:

IMMEDIATE USE OF CUT-OVER LAND

BY B. W. HOVELAND, ATLAS SHINGLE & LBR. CO.,

MCMURRAY, WASHINGTON

"It is my earnest belief that if lumbermen were more familiar with the cost of seeding logged-off lands and were made to realize the benefits from the seeding in actual returns, not a single acre of possible agricultural land would be left to

P. L. C. Banquet given by Bellingham Lumberman and Toastmaster Frank B. Cole.

grow back into brush. This fact is more strongly impressed on me from the experiences of my own childhood for it was my lot as a boy to help hew a farm out of the forest or, perhaps worse, from the charred waste left by the loggers. Hence I write from personal experience and that of others whose brain and brawn have been pitted against tangles of undergrowth, giant stumps and charred desolation. To emphasize this, as I would like to in order to give forceful weight to my argument, would require too much space, but let it suffice that my present ideas originated from my early struggles in helping clear a stump farm.

"We all know that the rich do not settle on logged-off land and that the people who do are generally too poor to buy improved land and can only buy logged-off land on very liberal terms and after buying must work out the most of their time for many years, in order to meet taxes, interest, insurance and payments on the land; also to provide for the family; and they depend mostly on being employed in the nearby camps and mills. As the timber is cut away faster than the land is settled they must then seek work away from home; and it follows that the clearing of the land is greatly retarded by such absence which is the principal reason why logged-off land is so slowly developed after the settler first moves on the land. It's not always due to lack of industry or thrift that the original purchaser fails to realize the dreams of his ambition,—independence and a home.

"In order to insure quicker development of cut-over lands and better inducements to settlers who must eventually be the backbone of any community, a way must be found to keep the settler on his land so that he can put in all of his time developing his farm and still have an income large enough to meet his obligations and provide for his family. How may this be done?

"I shall not touch upon all the arguments advanced by others in this respect, or belittle or criticise the efforts or suggestions of others for they are, no doubt, all worthy and well inspired whether they be through legislation calling for state loans, powder mills or the different methods of economic clearing of land; most all of these have merited points with splendid features. However, our methods if pursued by other owners of timber lands, will be a short-cut in this direction and in the writer's opinion, be the means which can enable the farmer to stick with his ranch at all times and develop his own farm and realize the true value of the spirit of home and independence, instead of having to spend three fourths of his time away from his home working for others, which is not only a hardship on him but on the entire state and a loss for which every member of the state must eventually pay.

"Our experience teaches that the seeding of cut-over land pays and paves an easy way for the coming settler. 'How can it pay the land owner to seed cut-over land?' has been an oft-repeated question to me, I answer: First of all to protect against forest fires. We all know slashings are a danger and menace, even after once burned over, for the same slashing may often burn over three or four times and losses are known from each of these fires. Our experience is that a burn once seeded to grass is immune from any more fires and makes the best kind of fire trails. This was demonstrated with us two years ago when one of our

camps was wiped out by fire which travelled through an old burn. On another side of the timber the burn had been seeded to grass and here the fire was halted by the green grass which also served to keep the debris on the ground damp and moist. In many instances money spent on fire trails would be much better expended in seeding old burns and done at a lesser cost. This benefit alone is of untold importance to the timber interests, aside from the enhanced value of the land.

"No one disputes the fact that this land will grow grass nor that cows will eat grass and produce milk and butter and that no country is more adapted for stock and dairy farming than the Pacific Northwest. Our concern, the Atlas Lumber Co., has 2,000 acres of cut-over land seeded to grass which is green the entire year. It is also beyond dispute that 40 to 80 acres of this land can support a small herd of cattle or milk cows besides pigs. With plenty of pasture any thrifty man can in a very short time become the owner of ten or fifteen cows which will support him and bring in a little besides, leaving him in position to spend all of his time in developing his farm, which not only induces wealth and prosperity to the farmer and his family but to the entire state and community.

"The reader is perhaps interested to know the probable cost of seeding cut-over land to grass and will it pay the land owners to do so. Now here the writer does not agree with agricultural bulletins recommending 25 to 35 pounds of seed per acre, for in seeding one tract of 700 acres we used from three to seven pounds to the acre and better results could never be asked for. Therefore, the cost per acre, including seed and labor can easily be kept within $2.25 per acre and as low as $1.40, and when the land is sold any man will be only too glad to pay the extra $2.25 per acre to have his land in grass. We seed any time after a burn, midsummer spring or fall; the first rain will bring the seed in contact with the earth and ash, insuring germination. Always have your seed tested.

"I have tried to show that seeding cut-over land is of great value to the settler and that any thrifty man with a good wife and growing family to help him can make a living on seeded land without working away from home.

"Mr. Patten, who is the moving spirit in our company, conceived the idea of extending this work further than just seeding the land to be placed on the market. Therefore, up till the present time, our seeded lands have been reserved for the purpose of a stock and dairy farm. We have now about 2,000 acres of seeded land for this purpose, and expect to add about 1,000 acres more to this in another year, when this tract will be logged off.

"However, this work is in the experimental stage, and for that reason I had intended not to mention this in my talk; not because we are ashamed of our big stump farm, but rather because we haven't gone far enough to determine the things we want to know about either stock or dairy farming. But Mr. Cornwall was of the opinion that the Logging Congress would be interested to know our ideas in this respect.

"With the exception of 10 or 15 acres we have not cleared any land, and in seeding we do not cut or pile any brush. At a seasonable time after the land is logged off we burn the slashings and immediately seed the land to grass. When the grass is far enough along to pasture, we fence it and let the stock in on it. We have to employ a couple of men to look after the cattle, and they put in their spare time in opening up old skid roads, logging roads and trails, allowing the cattle to move around as freely as possible. This is done at a vey low cost.

"The cost of seeding depends on the experience and efficiency of the men, the kind and amount of seed, also the season. In seeding in midsummer we seed a trifle more than in the spring or fall, as some of the seed may not germinate so readily. The seed is scattered by hand and the men work abreast as much as possible. We have tried different grasses and have been most successful with orchard grass, which is also a perennial grass; but we have also been fairly successful with rye grass and white clover, while our experience with red clover is also gratifying. Red clover, however, can only be seeded in the spring when immune from late frosts, or in the early fall. The experience of our neighbors is much to the effect that red clover will run out in five to seven years, when other grasses will take its place. Timothy is a very nice grass, but I would not advise seeding this on cut-over lands, as this also will run out in a few years. However, the kind of grass to grow depends much on the character of the soil and local conditions.

"We find that orchard and rye grass mixed eight to ten pounds to the acre will make a fair stand and will re-seed itself heavier. Orchard grass costs from 17 to 21 cents and rye grass from seven to nine cents; and one man can seed on the average six acres per day; and the labor may be safely figured at 40 cents per acre; If five pounds each of orchard and rye grass is seeded the seed will cost on the average $1.35 per acre, making a total of $1.75 per acre for labor and seed.

"I wish I could tell you more about the cattle business than I know at this time. We have been seeding for the last five or six years; but we have only been in the cow business about a year and a half, hence we are very young in this line; As far as we have gone we have applied as practical methods as possible to the work, also, with as little expense as possible, and we havn't put a penny into any kind of elaborate show.

"In barn building and land improvements we all have our own ideas and our own reasons for doing this, that or the other; and while many of our friends have spent fortunes in building and other improvements, our expenditures are very modest in this respect. On our farms we have twelve buildings, covering 8,196 square feet of ground, costing $2,400. We have one barn 30x64, which will hold 40 cows, at the cost of $446, and is just as comfortable and well arranged as any barn, and gives the same service as one costing $3,000. We aim to make farming a business instead of a hobby—for which we have two good reasons: One, to bring the farm on an early paying basis; the other to demonstrate to the home seeker that farming in this way can be made a pleasure and profit without clearing up the entire tract at a big expense, or the unnecessary cost of expensive buildings.

"From my own experience there is no question but what a farmer with a growing family to help along can get along very nicely if his land is first seeded to grass, as I have described. As a corporation we are handicapped with overhead expense that the small farmer is not; hence we are up against a much harder proposition. A small stump farmer

Y. M. C. A. Welfare Banquet and John A. Goodell, Northwest Industrial Secretary.

will figure on future profits from increased soil fertility, clearing and improvements; while the big stump farmer wants immediate returns. To the small stump farmer fertilizing values per cow are worth $4 per month, as compared with commercial products for which the big stump farmer makes no allowance. The small farmer has a wife and children to help with the milking and care of stock; the big farmer must constantly pay for every bit of labor at high cost; and it is evident that the big farmer with his hired labor must have a larger income proportionately than the man on a small piece of land.

"Realizing this, we started in on a large scale for beginners and began with 100 head of young cattle, mostly one and two years old. Today we have about 175 head. As Western Washington is peculiarly adapted for dairy farming we aim to pursue this kind of farming and purchased two of the best Ayrshire bulls to be had, and from mixed dairy cattle we are grading up a herd of Ayrshire cows. After extensive investigations we chose the Ayrshire as they are by far the hardiest breed of dairy cattle, having originated in Scotland where they have had to rustle much the same as a goat. We were partial to no breed but sought a breed that would be most adapted for cut-over lands. Aside from their hardy rustling nature and the ability to produce more milk on less food than any other breed, the udder on the Ayrshire cow hangs close to the stomach extending well forward and lessens the danger of torn udder and teats, while yielding on an average an equal flow of milk with the other breeds.

"I feel that we are still too young in the business to offer advice to others, but from our past experience, while it may be safe for any company to raise beef cattle which does not require so much skill and care, we are content to go on with our original plans. Up to this time our calves were allowed to run with the cows, but we are now fencing in separate small pastures for milk cows and calf pastures. As our stock is all young we do not look for any big milk checks this year, but I am confident that next year the milk will leave us a net profit aside from the improvement to the land from grazing and tramping down twigs and rotten wood, lessening the future cost of clearing. We value the present cost of this land to $40 per acre.

"I am well aware that the average man is more enthusiastic in a good work when it can be made remunerative, and it is my earnest belief that if the owners of cut-over land will learn to have a little more faith in this work and direct a small portion of their brains and energy in this direction, they will find more pleasure and profit from this work than they have any idea of at this time.

"Often while tramping over denuded forest areas the thought has occurred to me that we owe something to this land after having re-

1. Picnic crowd at work. Mr. McMillan and President Donovan in center.
2. J. R. McMillan telling the picnic bunch about that "Battle Ground of Nations."
3. Steamer Whatcom and the P. L. C. picnic at Roche Harbor Wharf.
4. Salute fiired in honor of P. L. C. picnic, Roche Harbor.
5. The Picnic posing for its picture.

moved its wonderful wealth of green forests; and if we can carpet these hills with green grass and dot them with cattle and contented homes, and do this at a profit to ourselves, it will give us a source of satisfaction that can never come from any other branch of the lumber industry.

"I realize that I am facing and directing these remarks to an audience of wonderfully alert, active doers—an aggregation of energy masters and brilliant minds, such as few men have an opportunity to address; and I sincerely believe that if a small part of the skilled brain of this Congress is earnestly devoted to this new industry the same results will be obtained that have marked the evolution from oxen to steam engineering in scientific logging.

"In closing I wish to say that if I have aroused the interest of a single man in this Congress, I shall feel amply rewarded for what little I have done, and feel proud that I have the privilege of being a small factor in the advancement in what I consider the greatest issue confronting our great West."

After Mr. Hoveland's address, E. T. Allen, Forester of the Western

H E I S L E R
Geared Locomotives

Are especially adapted for heavy hauling on steep grades, sharp curves and uneven tracks. For logging, switching and pulling on main lines, mills, furnaces and industrial purposes.

Just off the press, new detailed descriptive catalogue 108.

Heisler Locomotive Works

ERIE, PENN., U. S. A.

51,000 BUYERS OF LUMBER.

The Southern Lumberman's "Directory of Lumber Consuming Factories" contains the names of every factory consuming lumber, every wholesale lumber dealer, and every retail lumber dealer in the United States, as well as every lumber consuming factory in Canada. For the factories in the United States data is given showing just what lumber they use, what grades and sizes.

One of the largest lumber companies in the country writes us: "We do not see how any up-to-date concern could afford to be without it."

The price is $15 per copy, and the book will be sent on ten days approval to any responsible concern.

Contains 912 pages of accurate, up-to-date information of incalculable value to the lumberman.

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Southern Lumberman

Nashville, Tenn.

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NEWTON BUILDING.
ST. PAUL, MINN.

Forestry and Conservation Association," summed up the year's work along fire-prevention lines in a concise paper. The following extract describes the methods used.

"An impressive colored picture, 'Putting Out the Campfire,' showing a woodsman extinquishing his fire before leaving camp, has been placed on practically every schoolroom wall in the Forested Northwest and in a smaller size been taken home to every family in important territory. It has also gone to every newspaper office. This picture made a big hit. In many cases teachers used it as a composition subject.

"A cartoon poster using a clock face to show the danger season and provide a calendar, has been distributed to the number of 20,000.

"We have sent 10,000 sequence signs, six in a set and each bringing out a different appeal against carelessness with fire, designed to be posted along trails and roads so travelers after reading one or two will watch for the next. These are very popular.

"Ranking with our public school devices as among the most far reaching things we have put out, and comparatively inexpensive, are the slides we have put before the public in every Northwestern town that has a moving picture theater.

"Tin cups bearing fire material in the bottom were supplied constituent associations for distribution by wardens to road gangs, camping parties, etc., and for placing at springs.

"By arranging for joint orders, cheap rates were obtained on about 20,000 whetstones with fire cautions on the back.

"All railroads were reminded to repeat fire material in the Summer folders and resort literature.

"A magazine supplement syndicate supplying over 50 Northwestern papers with a weekly extra runs special fire and lumbering material whenever we wish. Also the railroad magazine, 'Pacific Semaphore.'

"About 800 newspapers receive monthly bulletins on fire news and precautions.

"State school authorities were provided with forest protection material for Arbor Day use.

"The cost of the above projects has been partly reimbursed by sales of material in Canada and to state forest departments. British Columbia obtains practically all its forest publicity material from us and we sell a considerable quantity in the East."

Geo. S. Long of the Weyerhaeuser Timber Co. was unfortunately unable to be present to deliver the concluding address for which he was scheduled, and there remained nothing therefore but for President Donovan to declare the business of the Sixth Congress at an end and to invite all to be present at the Big Banquet to be given by Bellingham lumbermen that evening in the Hotel Leopold.

Visiting ladies were to be entertained out at the Country Club at the same time, and all were to meet again on the morrow for an excursion among the San Juan Islands.

BIG BELLINGHAM BANQUET

EATEN AND DESCRIBED BY S. MACHINERY

Now, in the first place they made the mistake of getting Frank B. Cole of Tacoma to act as toastmaster at this banquet.

In consequence, seventeen of the guests had to be removed from the hall and operated upon for olives

They are Speaking from Experience

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I consider it all that a trade paper can possibly be.
C. D. JOHNSON, President of Frost-Johnson Lumber Co., St. Louis, Mo.

We regard your paper as the best lumber trade journal.
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We consider your paper one of the most up-to-date, trustworthy and reliable papers of its kind published.
CROWN LUMBER AND SILO CO., Omaha, Neb.

We have always looked upon the St. Louis Lumberman as being the best paper published in the industry.
CENTRAL COAL AND COKE CO., Kansas City, Mo.

We find your paper to be of considerable interest, and we are only sorry that we have not been numbered among your list of subscribers before.
C. C. SHAFER, Cairo, Ill.

In all that goes to make up a first-class lumber journal we consider the St. Louis Lumberman in the foremost rank.
HIMMELBERGER-HARRISON LUMBER CO., Morehouse, Mo.

I am reading all the principal lumber trade papers and mean no flattery when I say none of them is giving as much valuable information to the general lumber trade as yours.
H. C SCEARCE, Sec'y, Retail Lumber Dealers' Association of Indiana.

All trade papers are beneficial to the lumbermen. but you have brought your paper to the standard where there is no use denying the fact that it leads them all.
PHILIPP OTT & SON, Jefferson City, Mo.

ADVERTISERS——

We have always considered the St. Louis Lumberman the most valuable advertising medium, inasmuch as it reaches the retail trade, and especially the South and Middle-Western territory.
W. R. PICKERING LUMBER CO. Kansas City, Mo.

We have been advertising in the St. Louis Lumberman for a number of years, and find it a very satisfactory medium.
SOULE STEAM FEED WORKS Meridian, Miss.

The business we have been able to trace as the direct result of our advertising is very satisfactory, and our Purchasing Department find it almost indispensable as a reference book.
LOCK, MOORE & CO., Ltd. Westlake, Mo.

We congratulate you on the continued growth and usefulness of the paper, and we are free to confess that its effectiveness as an advertising medium has been well borne out in our experience with it during the past eighteen years.
HALL & BROWN WOOD WORKING MACHINE CO. St. Louis, Mo.

We are more than satisfied with the paper as an advertising medium, and are glad to renew our contract with you.
BERTHOLD & JENNINGS St. Louis, Mo.

The St. Louis Lumberman has been one of the most valuable newspapers for the advertising of the southern mill operators.
DIERKS LUMBER & COAL CO., Kansas City, Mo.

Issued twice a month. Subscription price $2.00 the year. Advertising rates and detailed circulation facts furnished on request. Send for sample copy.

The LUMBERMAN ST. LOUIS

LUMBERMEN'S BUILDING, ST. LOUIS, MO.

DO YOU OWN A TREE?

Do YOU know what it is, how to care for it, what it is worth and what to do for it whether you own one tree or thousands of them?

The American Forestry Association, a public-service, non-commercial organization, working for the benefit of tree lovers and tree owners, desires to send you some literature about trees,—you will find it valuable.

Send your name and address and specify whether you have a few shade trees, a woodlot, a well wooded country estate, some timberland, or whether you just love trees.

American Forestry Association

Washington,
D. C.

and other pickles in their windpipes before the banquet had well begun.

Because Frank B. Cole is the most irresistably comic cuss we have ever eaten under.

He is, without question, the man who put jest in digest but you must watch him while you swallow or take the consequences.

First they took a picture of us, under the direction of President Donovan who stood up and asked us all to look that way.

Cole commented on the brutality of this request, but in reality the President is a most distinquished looking gentleman and few of those present could take a beauty prize with him in competition.

But Cole had more things to say about President Donovan, whom he accused of dropping the O' from his name only since getting into the logging line.

He suspected the peerless president of harking back to Erin originally, and that reminded him of how they came to be a-wearin' of the green on the owld sod.

It seems that way before Saint Pathrick's time they were troubled outrageously with the sarpints, until a returning traveler told them that monkeys were death to all such varmints.

Then they inported a few hundred monkies and pretty soon there wasn't a snake to be found thruout Ireland's length and breadth.

But monkies are reproductive reptiles and in every way opposed to race suicide.

So, in a few years, they increased and multiplied to such an extent that they became a worse pest than the snakes had been.

A war of extermination began, but every once in a while some short-sighted exterminator would exterminate a few Irishmen by mistake.

—And so every Irishman took to wearing a knot of green ribbon by way of identification!

Then, again, on the subject of profit-sharing, Cole climbed onto Donovan's mental frame with the base but baseless inference that while he divided profits in the mill one year and in the woods the next, he shut down every other year alternately in each department so that the profit sharing period never arrived.

At this moment there came a demand for a song from H. M. Strathern, the only logger in the world who ever received a command to sing before her late majesty, Queen Victoria—which he did very shortly before her death.

A man named Martin, who is civil engineer for the Cherry Valley Logging Co., courageously volunteered to play the accompaniment if they would put a sand screen around the instrument.

Strathern then sang "Comin thru the Rye" so effectively that he had half the audience groggy before the closing bar.

He also started to sing another song, the name and nature of which we could not catch.

Ed English was then asked to give his opinion on whether a logger could be honest under any circumstances, but, owing to the occupation of most of those present, diplomatically declined to commit himself.

Pat McCoy was asked whether a logger should ever steal logs, and begged the question by drawing our attention to a little pamphlet scattered over the tables which stated definitely that "Loggers Steel Bunks"—and if they will do that they will do anything.

O. D. Colvin was then called upon to explain how

It requires some investment to insure a constant supply of logs for your mill through the purchase of Clyde Self-Propelling Logging Machinery

But remember,

You pay more—and you keep on paying—for the skidders and loaders you don't buy.

Now this fact is susceptible of PROOF and we are going to ask you to make us prove it to you.

CLYDE IRON WORKS

Manufacturers of Machines for EVERY Logging Operation

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"Great Port of the Northwest"

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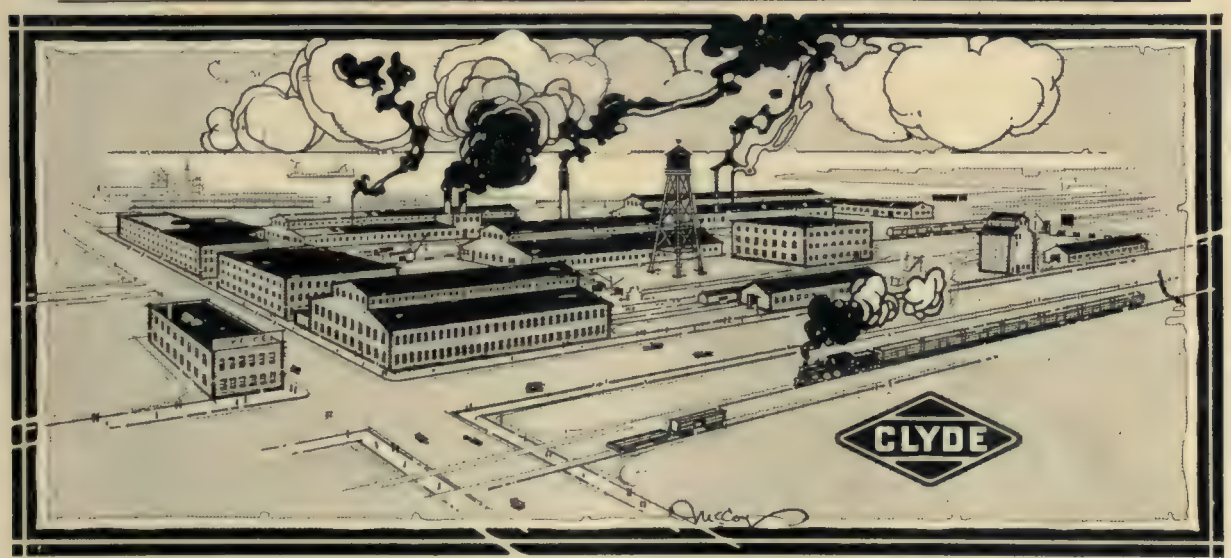

"There's No Place Like Home"—Pages 34-35.

American Lumberman

CHICAGO MAY 31 1913

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READ IT, because—

You get it *every week.*

It will keep you posted on markets, *every week.*

It will give you the news of the entire lumber world, *every week.*

It contains dependable and authoritative editorial comment and opinions on matters of interest to the lumber trade *every week.*

Its many departments and special articles provide a veritable compendium of instructive, informing and entertaining lumber miscellany, *every week.*

Its able staff of editors, reporters and correspondents, and its exceptional news gathering facilities enable it *every week* to present such a comprehensive and dependable review of all matters pertaining to the lumber trade as to have earned the title of "World's Greatest Lumber Paper".

ADVERTISE IN IT, because—

It reaches practically ALL the trade.

Its advertising pages are considered the leading directory or guide to "Where to Buy".

It will give you MORE circulation than any two other lumber papers combined.

It will give you BETTER circulation. The average credit rating of its subscribers exceeds $100,000 each.

You will get inquiries from firms who will make the most desirable customers, many of whom could not be reached through other media.

Its thousands of readers BUY it and pay $4.00 a year for it IN ADVANCE, thus guaranteeing a bona fide circulation among people who want the best and have the means to pay for it.

Ask for sample copy and further particulars.

American Lumberman

World's Greatest Lumber Paper

CHICAGO

he happened to be pinched for speeding his auto and which of Seattle's baby mountains he had selected for the speed test.

He denied the allegation and offered to race the alligator on the dead level.

King of the West Coast Lumberman explained how glad he was to be with us, and Dr. Maule was then invited to maul the sentiment of "Symptoms" which he handled with such hypnotic effect that many of those present began to get 'em.

Then came Tom Shields of the Simonds Sawyers, telling stories which would keep us out of the mails if we repeated them.

Laird, of the Potlatch people, was to have been presented with a solid silver loving cup at this stage of the proceedings.

The cup was there but Laird was far away in Idaho, supervising a flock of fire fighters.

The cup was in recognition of the hearty hospitality accorded the Fifth Congress when they went out to look over the Potlatch operations. There's a picture of it on another page of this periodical.

Just before the banquet broke up, President Donovan, who had been observed wearing an intense and concentrated expression over in his corner of the table for some twenty minutes or so, came to the surface with a little anecdote about Cole which squared matters up and also rounded them off nicely.

On some past occasion Cole was invited to attend a fancy-dress ball and came to Donovan for advice as to what costume he should wear.

"Why, Cole, you don't need any costume" dibbed Donovan,"Just sugar-coat the top of your head and go as a pill!"

And so the banquet dissolved in disorder.

Night slammed down over the Hotel Leopold, but peaceful sleep forebore to settle.

This because Richards of Roeblings was stage-managing a little series of tragedies in his room next to the Scribe's.

First they took Joe Irving and ripped off one pants-leg, binding the exposed limb in many swathes of linen. Then they put an ice pack about his brow, laid him gently in bed and called up Tim Jerome, telling him that poor old Joe had gotten into an argument with a bunch of rednecks and was in pretty serious shape.

Said that in his lucid moments he continually called for Tim, and that he had better come over right away.

Ten seconds later, Tim trailed down the corridor and turned into Richard's room.

With tears in his eyes he stood beside the bedside of the disfigured victim and, placing one wabbly hand on his chest, inquired in trembling tones, "Joe, old man, do you know me?"

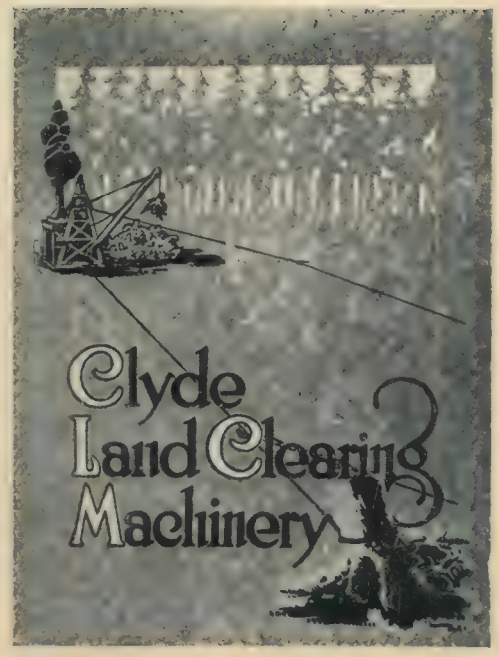
Then the bathroom door burst open and the whole bunch burbled into the room, bubbling with unseemly hilarity, and trampled all over Tim's tenderest feelings.

However, his relief at finding that Irving was still intact was so great that he even consented to assist in resetting the trap for another victim.

The next patient was Stephens, and to him they brought Bird by means of an A. D. T. messenger at four in the morning.

So it may well be imagined that Morpheus and MacHinery were scarcely on speaking terms that night.

None-the-less, any interested observer might have



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OF "STAG" Manganese Steel will average at least six times the life of ordinary steel. They are tough and strong and stubbornly resist wear.

Are guaranteed to be economical.

If you have dimensions of your gears write us. If not buy through the locomotive manufacturer and specify our steel.

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A 75 per cent Saving in Lubrication

SHAFTENE

Save money, time, machinery and labor. Sent on 30 days trial, no charge for amount used if SHAFTENE fails to solve your lubricating problems. Ask for list of satisfied users. Manufactured and sold ONLY by

THE TROPICAL OIL CO.
CLEVELAND, OHIO

found him, bright and early on the morning of Saturday the Twenty-ninth, standing beside Johnny British Iles on the deck of the Steamer Whatcom, ready for the final day's proceedings of the Sixth P. L. C.

This took the shape of an excursion through the San Juan Islands to Roche Harbor where the greatest lime works in the world and the biggest poultry farm both are located.

The lime works are of the Roche Harbor Lime Company, and the poultry place is known as the Bellevue Poultry Farm.

Both are under the direct supervision of President the Hon. John S. McMillan, who personally received the visitors and told them somewhat of the history of the place.

Time forbade his introducing us to any of the poultry, except in a cooked condition.

Returning, they took one last picture of us as we boarded the boat, and right here Cole's capacity as a spieler was once again called into action.

"Cole, can't you say something to make these people get aboard more rapidly?" shouted Donovan form the dock.

And at once Cole nearly caused a stampede by yelling;—

"Oh peepul! Come aboard quickly! The boat is sinking!"

But the captain calmed the crowd and the boat continued safely to its journey's end—and ours!

This, then, is a complete and veracious history of the Sixth Annual Session of the Pacific Logging Congress, as written by S. MacHinery in the Benson Hotel in Portland, the Rose City, this third day of September.

May it please and profit you!

Buying Lumber

Then you want to know all about western prices for fir, redwood, spruce, sugar and white pine, redwood and cedar shingles!

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Western Lumberman

$2.00 per year
Published twice-a-month

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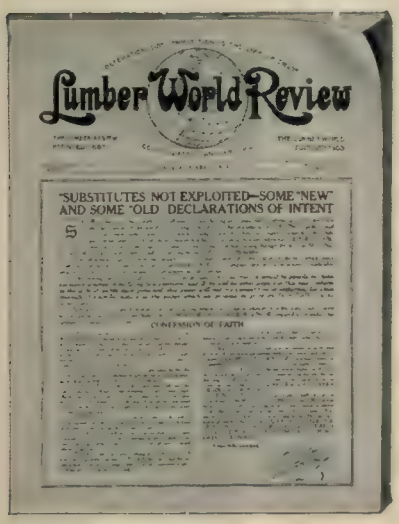
"Experience With A Cable Tram Road"



WOULD you like to know the experience some men have had with a cable tram road?

It is always interesting to know how the "other fellow" does things. Even if we don't always agree with him we get some idea that may mean many dollars to us.

In our December 10, 1913, issue we published a practical discussion of one man's experience with a cable tram road.

The LUMBER WORLD REVIEW publishes practical ideas, plans, etc. in every issue. The methods used by the *other fellow* to make his success are full of ideas for YOU.

Read the LUMBER WORLD REVIEW and get the "other fellow's" viewpoint.

A postal card request will bring a sample copy to you FREE by return mail. Send for YOUR COPY TODAY.

LUMBER WORLD REVIEW

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DIRECT PUBLICITY

and its

INCREASING VALUE

THE trend of the times calls for direct forceful, pertinent appeals to the buying public. This is shown by the growth of Trade Paper and specially prepared printed advertising matter. The latter class includes house organs, broadsides, booklets, etc. Our province lies in this field.

Many readers of Steam Machinery availed themselves during the past month of our offer to send a free copy of "Direct Publicity and Stewart Service Therein." We now renew the offer.

By sending for this booklet, you are not obligating yourself. But if we can help you work out your Publicity-Problems, our Service department is at your disposal.

M. I. STEWART COMPANY

A RELIABLE SOURCE OF
SALESMANSHIP IN PRINT

DULUTH:—"Great Port of the
Northwest."

Vol. 2. No. 11.

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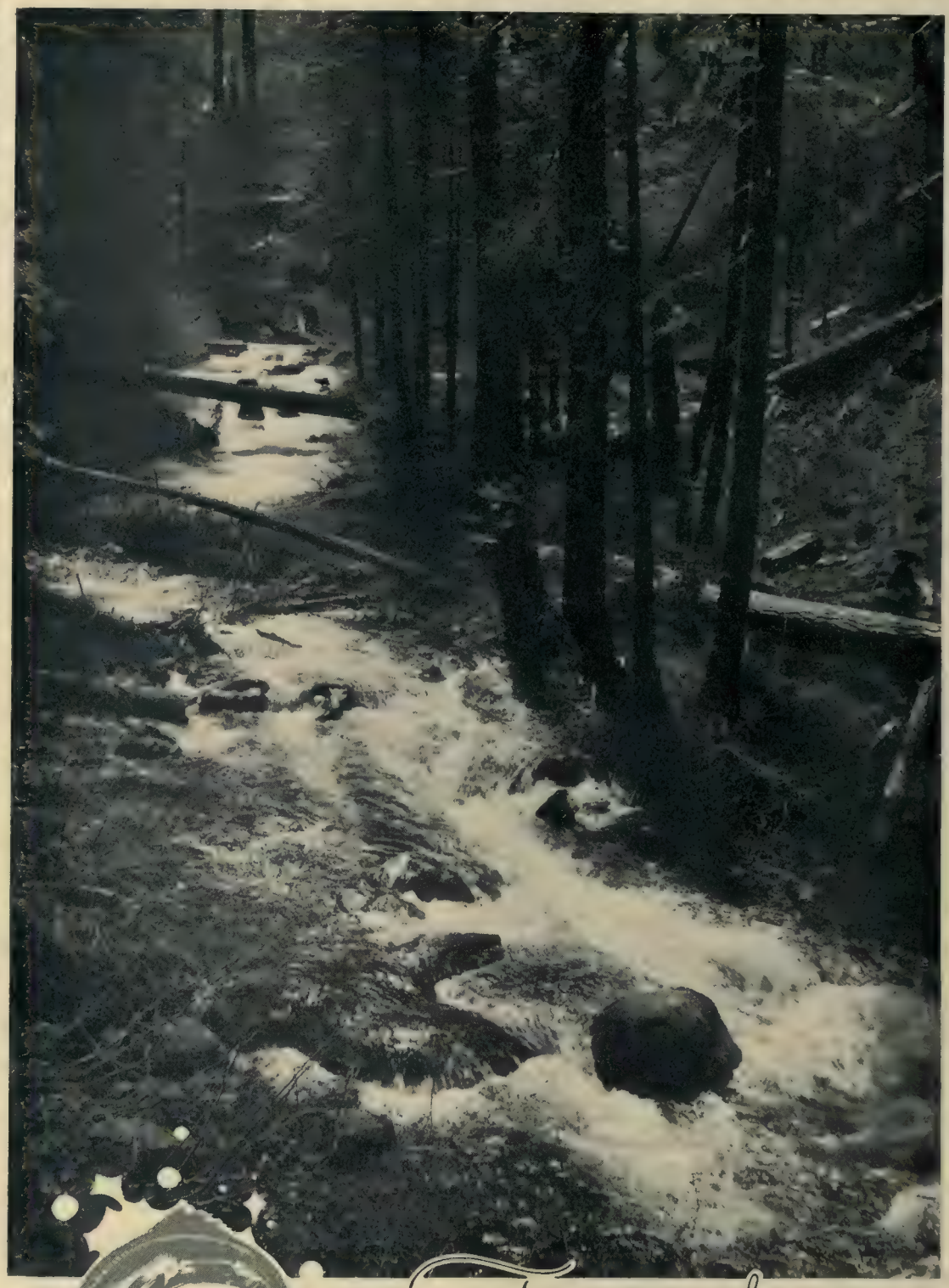
A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

FOR THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER



Teeming with trout
A view on the McCloud River

A Monthly Magazine of Men, Machinery & Methods

STEAM MACHINERY
DULUTH MINN.

Charles H. Mackintosh Managing Editor

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We absolutely and unconditionally guarantee never to publish in our columns advertising matter of a fraudulent or misleading nature, nor to accept copy from any firm whatsoever until we are satisfied beyond all possibility of reasonable doubt that such firm is in a position to live up to the letter of its proposals and has done so consistently in the past. This we do, not because we are better or more moral than other magazines of our day, but because we conceive the true purpose of a magazine to be service to its readers, and we would serve well in order that we may be well served.

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One Dollar a year to any part of the United States. One Dollar and Fifty Cents to Canada and foreign countries.

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Rates for advertising in the columns of STEAM MACHINERY, together with a detailed description of the *quality* and *quantity* of circulation. will be sent promptly upon request.

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OUR EDITORIAL NEEDS.

"STEAM MACHINERY" wants and is willing to pay for the co-operation of its readers in editorial and reportorial work.

We want to keep abreast of conditions in all departments of the logging world; giving our readers the first news and the true news about labor saving methods in their respective fields.

We want to know what the men behind the machines are doing to cut costs and increase efficiency in getting logs, laying and lifting track, caring for their machines and so forth.

We believe it will profit the men who are doing things to let us publish the evidence of their efficiency; we know it will benefit the industry as a whole to read reports which will have a tendency to increase practical knowledge and kindle ambition.

We know that the man who has these facts is not usually a writer, but we have plenty of pen-pushers who will attend to dressing up such articles for publication.

We want and will pay for the *facts* without caring a cuss about the form they come in, just so our not-very-intelligent reporters can get the point plainly and work it into perfectly pleasing paragraphs for the printing press.

We will pay according to the value of the idea, such value to be judged by the amount of space our editorial staff finds it worthy to occupy, at five dollars the full three column page of ten point type, excluding illustrations, for which we will pay one dollar apiece.

THE PUBLISHERS.

The Editor Thinks

WHAT IS the aim of life?—To labor and to love, to laugh and to live on in splendid service. ¶ Only thus can we win Happiness to walk with us along the way. ¶ For man's allotted heritage of years comes to him not by chance but in accord with an immeasurable, unimaginable Plan. ¶ This we know because already we can detect the vast lines of It, sweeping across our growing vision like the first faint shadows on a photographic film in the developer's tank. ¶ We see how man has marched along the path of Evolution for nine thousand years—and ninety thousand more, perhaps. ¶ We see him hemmed in on one side by the law of continuity which will not let him die and on the other by the law of necessity which will not let him rest. ¶ We see how Justice walks, clear-eyed, among him as he goes, preserving inviolate her one great law, that things which he does not do well must inevitably be done over. ¶ So far as we know, Man's spiritual essence is the highest creative expression of the divine Mind and cannot have been created to afford gratification to the coarser electrons of his corporal form. ¶—Rather this essence gathered the coarser electrons about it that it might find a place in time and space wherein to gain growth for God thru itself. ¶ For time and space are both material terms describing material things: to deal with them there needs material force which the omnipresent etheric essence can not possess. ¶ But it can group material electrons about itself in solar systems, planets and in separate egos:—we know this because it has done it and does. ¶ And so we guess that life is not for greed but for growth, since the body is but the servant of the Soul which knows not greed. ¶ It has no mouth to feed, no lusts to satiate; it cares not for hunger or thirst or cold, for even were it to lose its body can it not build another for itself?—Indeed, has it not been doing this thru all the deathless pasts? It seeks only to make the very most of what it has of time and space:—how often wasting both in contending against the body which was to serve it, sometimes losing an entire life because it proved weaker than its lusts! ¶ This because the spiritual essence must build itself a material brain wherewith to think those thots which its material hands may turn into material things for the good of God and us all. ¶ And however fine this material brain may be, yet it is far too coarse to respond to all the vibrations of the inner essence which created it. ¶ And because it can never understand the whole, the mind always slays its servant, the body, and drives out its master, the Soul, to seek another hold on time and space. ¶—And so it will happen until that End we may not know as yet.

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THE DANGER-PERIOD to a business as to a human boy comes around the time of assuming the first pair of long pants. ¶ When the boy-business begins to bust out at the seams and demand a larger suit of clothes, then comes the time of trial to all concerned. ¶ Many a good *little* businessman has had occasion to curse

the day he ever took his boy-business out of its kid clothes and tore a long piece off the Sherman Act wherein to swathe its growing limbs! ¶ For every man who can successfully run a big business there are a hundred who can successfully run only a small one. For each who can handle a boy-business there are a hundred who can handle only the infant industries of their own jobs, while beyond this class again there are a hundred to each in it who cannot even do that successfuly. ¶ Beware of the business which grows bigger than its boss, for no business can be more than "the lengthened shadow of one man" for long. ¶ When it passes beyond the capability and imagination of its creator there needs another Man—and that swiftly—or the ever-towering structure will collapse like a weak-stemmed sunflower. ¶ Big business demands big methods and a broad, far-reaching outlook. ¶ It needs a real admiral, who will plot the chart of every voyage before the smallest torpedo boat leaves the bay. ¶ There are a thousand things which must be done for a big business that a little business will do for itself. ¶ Markets must be extended and extended and extended, for the big business has a huge overhead and must carry an enormous volume of sales. It dares not rely—as can the little business—on the repeat orders of a select trade. It must always be about getting new customers who will repeat and get new repeaters: protecting its credits, extending its field, perfecting its methods and its service and always making *men;* for the big business is a brightly shining mark to all the arrows of outrageous fortune and competition, where the little business slips by under cover of its own obscurity! ¶ Truly, wherever you shall observe a successful big business you may know it for the living laurel-crown of a big *man.* ¶ Grapes are not sprung from thornbushes, nor are giants from weaklings; for like unto and from like is one of Nature's basic Laws.

△ ⊢ ♂

LAUGHTER is the name upon the labels of many strange packages, containing widely diverse drugs. ¶ We draw the cork from one and find it to be compounded from a mixture of envy and fear. ¶ And this is the laughter which follows the voicing of a lofty sentiment in mentally-mean company. ¶ It comes also when some splendid servant of humanity is praised in the presence of indolence and exaggerated egotism. ¶ It is no true laughter, but a sneer. ¶ Then there is a laughter-label on that slimy phial which is uncorked after the telling of a foul tale, the product of a stenchful mind. ¶ A high-pitched cackling whine this, but not truly laughter. For laughter is to the Soul what clean, clear water is to the body, refreshing and invigorating. ¶ Laughter is truly the language of the Soul wherein all things pure and lofty, clean and idealful, have their place. ¶ And laughter—if it is true laughter—must bear with it a certain cleansing and refreshing essence into the minds of all who hear it. ¶—It comes into our work-a-day world with a softening and a gentling touch, for it is the spirit of Love set to music. ¶ Let us laugh often then; for the greater happiness of ourselves and all who overhear. For loving laughter is the most infectious of all mortal moods:—and the most beneficent.

△ ⊢ ♂

NO MAN CAN WORSHIP GOD by proxy, and few can worship in any other way who take their religion in pre-digested form once a week, like a purgative. ¶ Consider how much better it would be to the individual if he would worship with a few kindred

minds, or withdraw entirely alone and worship within his soul. ¶ Let a man and his wife worship together, or a family, but never a crowd. ¶ The worship of God implies a sincere opening of the heart to the great eternal truths, and this man can hardly come at in the presence of any others. ¶ Silent communion opens a man's heart to the truth, but true worship must always become manifest in deeds. ¶ Whoever would worship God acceptably must do so in deeds and not in rituals or in hymns learned by rote. ¶ Think you to glorify God by listening to a hired choir intoning the Magnificat?—Go rather into your workshop or office and do your daily work with a fuller understanding of its use in and to the world. Worship God in your ledgers or with your tools and machines; glorify Him with well-done work; He will surely understand and you shall know Him in your heart. God can care little for words while the work of the world is so illy done.

△ ⊢▽ ♂

SELF-PRESERVATION is the second law of Nature. ¶ *Race*-preservation is the first. ¶ Nature has always attained the first thru the second, because if individuals of a race preserve themselves the race also is preserved. ¶ But for individuals as such she cares no more than we see in her lavish sowing of pine cones and seeds that one may germinate; in her abundance of spermatazoa that one out of millions may unite with an ovum. ¶ Now the instinct of self-preservation demands self-consciousness for its existence. ¶ The Ego must recognize itself as a Self distinct from all the not-self before it can strive to preserve that Self. ¶ And so, the higher we range in the scale of consciousness the stronger we find this instinct of self-preservation, until it reaches its highest development in Man. ¶ Man is essentially a Selfish creature. ¶ He has become so Self-conscious that all the rest of the Universe is nothing but a foil to his five senses. Each of us is the center of the Universe which moves around and above and beneath us. ¶ If then, you would make Man unselfish you must start by unmaking and re-making him. But the result will always be the same. ¶ For, as you develop him from his original elements and endow him with the essential centers of thot, you develop a Self which is the sum of those centers. ¶ Before they can arrange and compare, they must have something to arrange by and to compare with:—hence the consciousness of Self as distinct from the not-Self. ¶ Hence again you have a Self-conscious creature which *must* be Selfish because, while it can conceive of other Selves, it *knows* only one. ¶—Race-preservation is the first law of Nature, but *Self*-preservation is the first law of human nature.

△ ⊢▽ ♂

THERE ARE TWO WAYS THRU LIFE. ¶ And one is the broad white highway which pauses not for hill or hollow but goes on and over, like an arrow sent from a strong bow on a windless day. ¶ This is the stern and Roman road of duty. ¶ The other can scarcely be called a road at all. ¶ Rather it is a little mossy path among the woods, wandering beside musical waterfalls, weaving gemy tapestries among their mists. ¶ Swerving to pass a bank of fragrant violets or stooping to the brimming verge to catch a water-lily from beside the brink. ¶ Here and there and in and out it falters, pausing whenever and wherever Beauty calls. ¶ It knows no aim, no bounds of space, nor is it set in time nor halted by ambition. ¶ It follows the wind in the blossoms or the butterfly over the ferns. ¶ It is the Path of Least Resistance. ¶ A sweet, desireful way it is, but at the last it ends in mossy mould among the trunks of dead trees. ¶ While the other leads to the sublime city of splendid Service, where Men live in labor and in love.

Logging on the Slopes of Mt. Shasta

Begun in Prose and Travail on a Dresser in the McCloud Hotel and finished in California, Nevada, Utah, Colorado, Nebraska, Iowa, and Minnesota.

FOURTEEN thousand three hundred eighty feet above the waters of the Pacific:—Just so far had I progressed when five sharp yelps from a distant whistle proclaimed an attack of the Fire Demon on McCloud.

Now I am an honorary member of the McCloud Fire Brigade—as will be explained hereafter—and it behooved me at least to go and look at a fire in my bailiwick.

So I went and lookt.

A cold wind was blowing over the cone of Mt. Shasta and curving down on McCloud, so I am glad to be able to reassure you.

The fire was not serious.

Before I had reached the end of the hotel gallery there came the single long blast which, so my Membership Card informed me, signified "All's Well!"

I shivered three times in different ways and places and came on in to take up the strand of my stranded story.

—Fourteen thousand three hundred feet above the waters of the Pacific, the snow-capt cone of Shasta mounts among the Californian blue.

Sometimes there is a little private snow-storm going on up there, but most frequently the cone stands clean-cut against a sky of clear cold sapphire.

About sixty five hundred feet below the summit, the timber-line starts abruptly:—at least it seems abrupt from the level, which was as near as I got to said summit!

Now it seems that once a cotton-woolly cloud slipt off the summit of Shasta, rolled down his steep sides and spread out thru the timber on his southeastern shoulder until it plunged the potential townsite of McCloud into a genuine Scotch mist.

All this the townsite-pioneer perceived.

He saw the cloud on the summit, he saw it slip and he saw it become a Scotch mist.

So he inductively reasoned that it must have been a Scotch cloud in the first place. And he named the townsite Mack-Cloud—pronounced McCloud for short.

At once they built the McCloud River Railroad and began to build up the McCloud River Lumber Company.

The railroad has thirty-six miles of main line, reaching from Bartle to Sisson on the S. P.

It's seventeen miles from Sisson to McCloud, and you can figure out for yourselves how far it is from McCloud to Bartle. It has nothing to do with the story anyhow, which is why we mention it.

The principle function of the McCloud River Railroad is to convey logs taken from the slopes of Shasta by the McCloud River Lumber Co. to the two mills of that company at McCloud.

In addition to which it is a Common Carrier: and that means it must carry anybody with fare-money.

And so I came to McCloud.

My portable baggage consisted of two grips (each weighing thirty-five pounds), a ten pound Graflex and an umbrella. Then I also carry a Mackintosh as well as my umbrella, because a September morning is untrustworthy on the Coast.

Altogether we weighed two hundred seventy pounds, allowing three pounds for the umbrella which is probably too much.

Scarcely had my first foot stirred the Shasta-dust however, when the Mayor of McCloud stepped up and inquired: "Is this Mr. MacHinery?"

—You see he called me Mister.

I had half-expected to be met by the Mayor, but to be called Mister was too much.

I dropt all my packages and grasped him by the mitt while, with tears in my eyes, I admitted that he was indeed correctly suspicious.

Actually he may not be the Mayor of McCloud, but he was and is General Manager of the McCloud River Lumber Company which, in McCloud, is equivalent to being a deputy deity.

For the McCloud River Lumber Company is McCloud.

Every building in town belongs to the company and everybody in town works for it or for its twin-brother, the McCloud River Railroad.

So F. F. Spencer, General Manager of the McCloud River Lumber Company, effectively represented the entire municipality as he met me at the depot.

He hails from little old New Orleans, where the mighty Mississippi passes lazy-like to the great Gulf of Mexico, and he is of the finest type of America's lumbermen.

Lord knows how old he is: he looks about thirty, but then people with brains stay boyish all their lives long.

I intend to myself—if I ever get any brains.

Besides, he has lived in the shadow of Shasta for nearly a decade and he himself says that a man should live to be a hundred there, if he doesn't die in the meantime.

But all this is just getting him peeved at me without advancing our story.

So, if you will wait with Mr. Spencer while I beat it over to the McCloud Hotel to change into tuff togs, we will speedily on our ways to the loggeries!

We boarded Ben Parker's train which leaves McCloud at eight o'clock bound for Bartle, and since I arrived on the seven-fifty you can readily see the smoke as I pour out of my social get-up into hand-me-downs.

And then, at Bartle, we took the log-train on to Camp Three where hand-me-downs are de rigeur and Society Brand is nix so mox at all.

Passing thru Camp Three scornful like, since it was not yet tiffin-time, we went on to where a genuine McGiffert loader squatted on her haunches, waiting for empties.

But no!—On closer inspection we found a couple of cars concealed behind her, which same she promptly proceeded to draw thru her legs, bringing the fornintmost one up under her loading boom.

And then the Big Wheels began to arrive, each with its one, two or three logs, according to their size, semi-suspended beneath the axle.

Somebody knockt out a hook from the first arrival and blam!—a thousand feet of Western yellow pine rolled in the Shasta-dust at the foot of the landing.

This landing, by-the-way, consisted of a couple of logs and a lot of Shasta-dust—simply this and nothing nore.

Up and over they dragged the thousand footer when they had sunk their hooks into it, and so we clickt the curtain on our Graflex and went on out into the woods.

A fine, level, open country it was, with timber running about twenty thousand to the acre; mostly Western yellow pine which is commercially known as Californian white pine.

Not all the McCloud Company holdings are as ideal as this—or they would be using Big Wheels everywhere.

For they say it costs only forty-five cents the thousand to haul here with these implements of lumberculture.

But, in fact, they operate four camps in all: two with Big Wheels and McGiffert loaders and two with donkey engines.

Donkeys do the steep slope logging, where the growth is mainly fir and sugar pine, pulling thirty-two foot logs up the steep to the track, where they are loaded on log flats with a crotch-line and end hooks operated by the same machine.

The donkeys are set across the track from the direction of the pull and have A-shaped booms from which skidding (or yarding as they are called on the Coast) and loading blocks (and also the trip-line, or rehaul, block) are suspended.

At the time of my trip they had thirteen donkeys at work, one for loading alone. This last machine works with a big 12"x12" donkey which is too big to waste its time with loading.

In their two wheel camps, where they have mostly Western yellow pine which likes above everything to be on the level, they employ sixteen big wheels and three McGiffert loaders.

All together they log out a hundred million feet a year, of which nearly ninety percent is Western yellow pine.

But they tell me there are two billion feet ahead of them, so Shasta need not count on their departure for twenty years at least.

However, to be chronological, we are just returning from the woods at Camp three because they have tooted the Whistle on the McGiffert in testimony that tiffin is ready. Tiffin is Kiplingese and signifies eats. Nobody ever heard of it except Kipling, but we feel that it is a good word and ought to be encouraged.

Now tiffin was served to us on pine tables under the pine trees, hot from tight tins hauled out from the camp by a perfectly good horse.

Incidentally, they have some of the finest specimens of horseflesh on the Coast right here at Camp Three;—Cast your optics over the accompanying illustrations in verification of this fact!

As for the eats, if you had paid two dollars six bits for 'em at the Waldorf-

Ready to begin the Season's logging at McCloud.

Castoria you would have said "Bully!" and tipped the waiter a bean.

Neither is this bull, tho' they did promise me a job as bull-cook if ever I wanted it.

In both of the camps I visited, the grub was 'way beyond the average logger's wildest dreams.

They start with Kellogg's Toasted Cornflakes and they finished with the finest of fresh fruit—apples, peaches and golden grapes.

In between they sandwich fresh meat of a better sort than I can buy in Duluth, day-old bread—the desirable age—baked to perfection, chestnut-brown doughnuts in which the hole is just big enough to give the boiling lard a chance, and fresh butter of the kind they call "Creamery Extra" and soak you four bits a pound for in the cost-o'-living cities.

Then they have all the fresh vegetables what am—but if I continue you'll be accusing me of copying off the menu at the Benson in Portland.

Any man about McCloud who kicks on his grub, suffice it to say, has a triple-distilled grouch and no mind worth investigating. He deserves to eat wormy beans for the rest of his days!

Swelling with the macaroni-au-gratin and other things, I reluctantly rose from the table and allowed myself to be chived over to watch them rolling out logs ready for the Big Wheels.

While at this occupation—which is illustrated somewhere if you happen to notice it—we were joined by Mr. J. T. Bussey, Big Boss of the woods.

Mr. Bussey stands well over six feet in his logger's boots and is the busiest man in the woods.

He has been with the company for about eighteen years, filling every place in the woods up to his present position, "than which there aint none higher"—to paraphrase a certain slogan.

He is responsible only to Mr. Spencer and to his God, but he is of that type of men to whom responsibility is the breath of life.

When he gets too old to do big things he will be too old for this world.

But he is yet short of two score years and even the old prophets give him thirty more.

As a matter of probability, leading the life he does, he should more than double his present age and still do his day's work with the best of them.

From him I culled what information Mr. Spencer had not already given me, for Brother Bussey is a goldmine of information, and, unlike many loggers, is an able and instructive talker. He not only has the facts but he can do them into words, which is where most of us fall down.

In his buckboard we drove thru the manzanita back to Camp Three, pausing only to make a group of pines for the picture on page 332.

Manzanita, by the way, is not a new name for the Mexican national anthem.

It is a cross between ordinary laurel underbrush and water-hyacinth and can give both of these pests cards and spades and yet win out on aces and big and little Casino.

If there is any logging to be done

on the hinter side of the river Styx there will be lots and lots of manzanita there also. A logger's bades would be incomplete without it.

As we drove along, Brother Bussey explained how they had some seventy-five men in each of their two-wheel camps and also thirteen or fourteen teams.

—The men were a fine-looking bunch of husky hombres, and the horses lookt as tho each was all ready to pose for the First Prize at the Animal Horse Show!

In each of the donkey camps they work about a hundred men.

Camp Three—towards which we are now heading—is under the superintendence of Foreman Ed. Johnson, a perfectly pleasing portrait of whom will be found on this page.

This camp sends an average of one hundred thirty-five thousand feet of logs into the Twin Mills every working day.

And now we have come to the Camp itself—a tented town laid out in streets and avenues with the railroad running down its principle thoroughfare.

Each tent houses three men and is provided with sanitary steel bunks having comfortable mattresses.

Obviously the McCloud people believe in the gospel of a good night's rest, without which no man can be expected to develop his full efficiency, and they do their part to insure this to all their employees.

Of course it sometimes happens that men will rob themselves of this rest by baiting the pasteboards and passing the jug until along towards sunup, thereby unfitting themselves for effective work and giving their employers a raw deal; but when the employer has furnished every inducement to hit the hay on time—as in the McCloud camps—he has not the slightest cause for compunction in attaching the inevitable can.

But this was by no means the only evidence of the company's care for the welfare of its workers I found around Camp Three.

A bath-house with three or four enameled tubs and hot and cold water; a Chinese laundry maintained by the company to care for the men's clothes, and a better system of sanitation than will be found in many good-sized cities were other evidences of this care.

It seems that Dr. Legge, who has charge of the splendid hospital in McCloud about which we will have more to say later, is an authority on sanitation; so much of an authority, in fact, that the University of California will claim him on the first of 1915 to fill the chair in their new sanitation department.

All camps are inspected at least once a month and the greatest possible care is insisted upon in the disposal of all forms of camp refuse.

Even the refuse from the stables is buried in a pit situated some distance from the camp and is completely covered with earth after each dumping.

With such care exercised to protect them from disease and with their strenuous lives in the marvelous mountain air of northern California, it is not to be wondered at that the men about McCloud are splendid specimens of health and vigor.

Our visit to Camp Three was brot to a fitting conclusion with a special volcanic display from Mt.

McGiffert Loader working at Camp three.

Lassen, seventy miles away to the southeast, which, we were assured, was staged for our especial benefit.

This eruption, which occurred at 3:15 P. M. on Wednesday, September 9th, was one of the most violent Mt. Lassen had ever attempted.

The volcano itself was not visible from our vantage point at Camp Three but the tremendous cloud of smoke and steam, rising several thousand feet into the air above the intervening hills, came well within the range of my Graflex.

Unfortunately the shutter was wide open at the time and so the effect was almost lost on the negative. We have had to call on our memories and do a little retouching in order to give you an impression of this parting pyrotechnical display.

Eight o'clock next morning found me waiting at the McCloud depot for a train to take me out to one of the camps where donkey-engines do the logging.

Mr. Spencer's desk had become swamped with accumulated work and in his stead came one David S. Painter, Efficiency Expert, to act as my guide and to protect me from the attack of savage chipmunks or other wild and ferocious reptiles.

Camp One on Spur Sixty was the object of our ride, but before we could arrive it became necessary to abandon the log-train and climb a couple of thousand feet straight up the side of a mountain in order to cut off a three mile detour.

And this at an altitude of a mile and a half!

Now anyone coming from Duluth might naturally be expected to hoof it up any hill without batting an eyebrow or pausing for wind.

But Duluth, while built on edge, is only a few hundred feet above sea-level and the air is of about the consistency of a nice soft sofa-cushion when compared to that in the Shasta country.

Pathfinder Painter went up foot over foot because his lungs had become resigned to breathing 80% pure ether.

But this Scribe found it necessary to pause and admire the view of Shasta at least a dozen times on the way up.

So rarefied did the air become,—or, rather, so difficult to get—before reaching the top, that I had to make

at least a couple of pairs of pants in order to get one full breath.

Arrived at the summit at last, we almost stumbled over a donkey engine growling away to itself as it hauled in cable, hand over hand, bringing big sugar pine and fir logs up the track.

The donkey was mounted upon timber skids and was set on the yonder side of the tracks with its thirty foot A-shaped wooden boom pointing directly across them.

From this boom, skidding, loading and rehaul blocks were suspended.

A separate line is used for loading in order not to delay the skidding line on its way back to the logs. Loading is done with end hooks and skidding with chokers.

But we have already told you about these donkeys and we have about a mile to walk to Camp One Spur Sixty before we eat, so let us on our ways!

Walking along the spur, I note that fifty pound steel is used and that considerable grading has been done.

I also note, with particular emphasis, that eighteen ties are laid to each rail-length.

This last item of knowledge I am prepared to swear to, since I personally stept on each of them!

Spurs such as this cost between eleven and twelve hundred dollars a mile in this rocky Shasta country.

Arrived at Camp 1-60, we meet Foreman Herman Lilienthal and dinner with equal enthusiasm.

The eats were every bit as good as on the previous day, proving that no special preparation had been made either in honor of my visit or of Admission Day which was yesterday.

After eats, Foreman Lilienthal took me round about his camp and proved to me that Camp Three had no monopoly on cleanliness and sanitation.

Here also they have bath houses, sanitary steel bunks, Chinkese laundries and super-sanitation.

In the course of these perigrinations I ascertained that there were only two trade publications which Foreman Lilienthal read regularly.

—And the first of these was Steam Machinery, the other being The Timberwolf!

Inquiring then as to the size cables used in this part of the world, I was given the following dope:

Main skidding line—1⅛"

Loading line—⅞"

Rehaul line—⅝"

Chokers—1⅛"

All being carefully selected as the best and strongest wire-cable on the market of to-day.

Many had been called but only one was eventually chosen, so the foreman told me; and this one was our old friend Red Strand Rope.

They use 1600 feet of 1⅛" cable on each donkey and about 3250 feet of ⅝" rehaul.

As a general thing they go back an average of about 1500 ft. after logs, tracks being built as near as possible to half a mile apart.

Western Yellow Pine at Camp three.

Sample stick of Western Yellow Pine. 125 ft. in height. 4 ft. in Diameter.

How they pack water in McCloud woods.

Big Wheels working in Camp Four

Rolling out logs ready for Big Wheels

Hooking on to a Big log with the Big Wheels.

At the time of my visit they were going back 1300 feet.

In making a new set, the donkeys haul themselves up on a flat car and are pulled along to the next landing by a locomotive.

Mules are used in changing the lines at a new set.

Now, before leaving Camp 1-60, I learned something about the speed with which these tented towns can be moved from place to place and resetup.

They tell me that the complete camp equipment arrived at this present site at 5:10 P. M. one evening and that at 7:30 that same evening ninety men went in to supper with the cook shack built and every tent pitched and ready for occupancy. Next morning the whole bunch started logging again.—Two hours and twenty minutes to build an entire bailiwick is better than they can do even in the best of boom towns across the border!

Brother Bussey now joined us, just in time to show us an "easy" way down the mountain;—and it was easy enough on the mountain.

However I landed on the track in one section so I have no legitimate kick coming.

We walked down to Bartle, first stop out of McCloud, and there Brother Bussey showed me his new dining and cook cars.

These are forty-four feet long by twelve feet wide inside and each will seat fifty-two men.

They are not provided with trucks but are made to be jacked up and flats run in under them when ready to move.

While stationary, they stand on eight blocks supporting the four bottom cross sills at each end.

The cook car is to be provided with every modern convenience, and when fully equipped, will be the last punctuation-mark to progress.

And so we flagged the passenger—after it had passed—and meandered along into McCloud yet once again.

Next day, being Friday, the weather was a little fishy and I decided to take in the mills and town rather than risk a no-picture day in the woods.

Besides, I had already seen one wheel and one donkey camp and the others were almost exact duplicates.

But before beginning on the mills I got some cost-data from Mr. Spencer which, if you have no objections, I will slip to you right now.

The average costs of skidding and loading during the past year were as follows:

WHEEL CAMP NO. 3

Skidding with Big Wheels, 46c per M
Loading with McGiffert Loader.....22c per M

WHEEL CAMP NO. 4

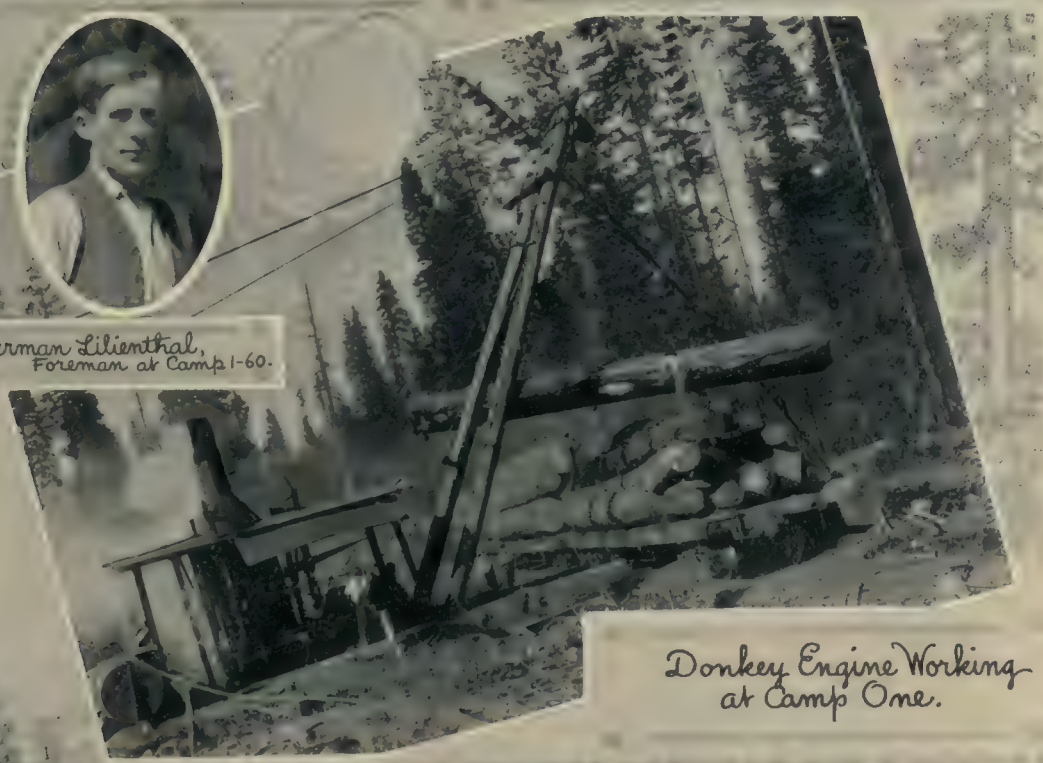
Skidding with Big Wheels 39c per M
Loading with McGiffert Loader.....26c per M

Eruption of Mt. Lassen.

Cook tent and Camp, 1-60

Lilienthal's house at Camp 1-60

Herman Lilienthal,
Foreman at Camp 1-60.



Donkey Engine Working
at Camp One.

Some trees and track at Camp 1-60.

Main line to Bartle.

Mill Number One-Power House

DONKEY CAMPS 1-60 AND 1-51

Skidding.....$1.00 per M

Loading.....40c per M

Camps 3 and 4 average about 135M a day, each, while the donkey engines average about 40M per day apiece.

* * *

And now Painter and I pass thru the yards, with their sixty million feet of well-assorted stock, pausing only to watch the work of the electric stacker illustrated on page 338.

This is certainly an ingenious and labor-saving machine and should effect quite a saving.

It is a comparatively recent addition to the McCloud family of implements of lumberculture.

There are two sawmills, one with two bands and t'other with a band and pony.

The first cuts 310M in twenty hours.

The second 325M in the same time.

We gave them the fifty-fifty but will not peeve you, who are loggers, with a mental blue-print.

Outside here, we find a steam drag-saw which is used to cut up logs into mill lengths and which is not so universally in use.

You'll find the picture on another page.

Returning thru the yards, we come upon a couple of gasoline locomotives puffing away in front of their trains of lumber cars.

My first sight of them was obtained just as a big rod locomotive backed out of the yard, and my first impression was to remark:

"Lor, I never knew before that those things had pups!"

Fortunately I remembered in time that this would lay me open to suit for infringement of copyright, and so I desisted.

I noticed also, in passing thru these yards, what exceptionally good fire protection they have.

Hydrants, located far enough from all buildings to permit their use in the face of an inferno of heat and flame, dotted the yards in all directions.

I was informed that one hundred pounds static pressure was maintained at all times.

The McCloud Fire Department, of which Mr. Spencer made me an honorary member as I have already noted, consists of seventeen companies including a chemical engine and the hook-and-ladder outfit.

There are seven men to each company.

We come now to the Round House, Machine Shop and Car Shops of the McCloud River Railway Company.

The round-house has capacity for thirteen locomotives at one time—the full equipment of the road,

McCloud's Mill, No Two.

eleven rod and two ninety-ton geared locomotives.

In the car shops they build their own logging cars which remain the property of the railroad department.

There are now some three hundred fifty logging flat-cars, twenty-five lumber flats, fifteen box cars, three passenger coaches and five dog-houses, or cabooses as these last are often called.

Mr. J. H. Queal, of Minneapolis,is president of both railroad and lumber companies.

Mr. D. M. Swobe is Vice-President and Traffic Manager of the railroad, and James C. Wilder is general superintendent of the same company.

And now we, Painter and I, pass beyond the confines of the plants and come upon the Employees Club.

This is a commodious and well-furnished building, containing among other aids to recreation, pocket-billiard tables and a library of twelve hundred volumes.

Among the twelve hundred I noticed the names of many of my best friends—Victor Hugo, Edgar Allen Poe, Alexander Dumas, Charles Dickens, Mark Twain, Rudyard Kipling and suchforth.

In addition, of course, they add each month's "six best sellers" but it will be seen from the above that there is some real literature in said library!

The way this library had its inception is somewhat interesting.

A friend of Andy the Piecemaker happened to be visiting the plant and, in the course of his travels, gave this Club the once over.

The officer of the company who was acting as his official guide, knowing of his friendship with the great steel magnate, suggested that if Andy would care to start a library in McCloud the company would supply and furnish the building, heat, light, caretaker, etc., if he would send along the books.

Andy's friend took the bluff up with him and the result was a check for five hundred Samoleons and, eventually, this collection of cataleptic thot.

The caretaker's name, by-the-way, is Charlie Ford: but, to my regret, he could not claim relationship with Hank the Autogink.

Our next port of call was the McCloud Hospital, which holds the world's record for comfort and cleanliness among all towns of up to twenty-five thousand population.

Unfortunately Dr. Legge has carried his camp-sanitation so far that the hospital is stark empty most of the time and has only accident cases the rest of the time.

Dr. Runkle showed me thru the building, pointing out the various operating rooms, private, public and

convalescent wards, all of which can well sustain comparison with a big modern city hospital.

A clever quotation, done onto pasteboard by Painter and presented to the doctors, caught my attention as I rescued my camera out of the dispensary

"Why is it some people will gladly give their lawyers $500 to keep them out of jail for six months, then kick like a steer if their doctor charges $50 to keep them out of Hell for life?"

—So it read, and so we snickered and shook hands and came out onto the lawn.

Now, after we had admired the lawns and gardens of McCloud—which has a population of twenty-five hundred—and had mussed our shoes on its freshly sprinkled streets; there remained nothing more to do but to beat it back to the hotel and wait for a train to Sisson.

True. Painter took me thru the company's commissary, but I remember nothing of it but an impression of aisles of furniture, clothing, food and suchstuff, coils of ammonia tubes covered with frost,

patent locking airtight doors and scads of other things almost as unexpected.

Again, if I were inclined to do a little private crowing, I might tell you how he took me on at a game of billiards that evening and what the final score lookt like.

—But anyway he claimed that I was a guest and entitled to so much special privilege.

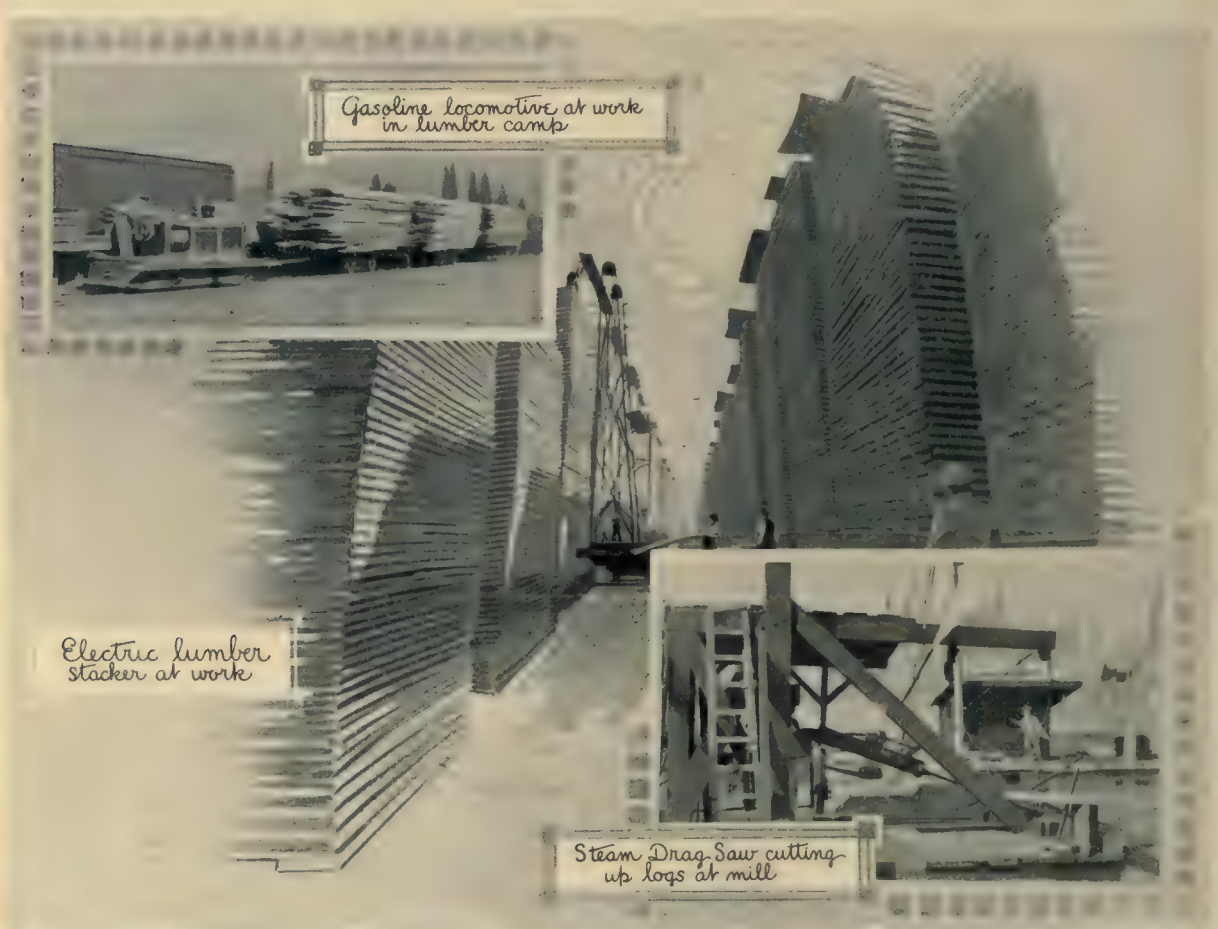
And so I said farewell to McCloud and steamed around the shoulder of Shasta until I came to Sisson, which is on the S. P.

There I caught a train for Weed:—but that is a new and different narrative.

So here we must make an end of our story of logging on the slopes of Mt. Shasta, having workt-in many things not strictly relevant to that title.

But, if you have struggled along thus far, you will surely overlook that now!

THE END.



Hotel McCloud, McCloud, Cal.

McCloud Hospital, McCloud, Cal.

Quincy Avenue,
McCloud, Cal.

Employees Club at McCloud

General Office of McCloud River Lumber Co.

Loading Logs on Gondolas

AN ACCOUNT OF A NEW FORM OF McGIFFERT LOADER SPECIALLY BUILT FOR THE McLEAN LUMBER CO FOR USE AT HAIRSTON ALABAMA.

Also an account of the working of this loader by :: A.E. McLEAN of McLEAN LUMBER COMPANY. ::

IN March 1914, the McLean Lumber Company put a loading problem of an unusual kind up to the Clyde engineers.

The solution of this problem and the way it workt out on the job will be of interest to loggers everywhere, even tho' the same condition will never arise with many of us.

The problem was this:

The McLean Lumber Company wanted to load logs along the main line of the Great Southern, and they wanted to load them in gondola cars because Hairston is in the heart of the Birmingham iron and coal district and gondolas were practically all they could get.

Now there was only one loading principle that could possible be applied to main line loading with this type of car and that was the McGiffert patent. Every other type with the exception of the Decker patent which could not possibly be adapted to gondolas demanded either a flat surface to carry the loader or a spur track to set it off on one side.

Now these logs had to be loaded wherever they happened to be; it would have meant a big expense to yard them in to spurs, in addition to the cost of building such.

So, with the McGiffert principle in mind, Mr. McLean came to the Clyde engineers and asked them to build a McGiffert Loader with 9' 4" clearance between rails and lifted wheel-frames.

You all know the McGiffert principle:—how the wheel frames are drawn up to a horizontal position under the machine, allowing the long supports on the ends of its four curved steel standards to settle down on the ties outside the rails, leaving the track clear.

Now the standard McGiffert Loader is built to give clearance for a logging car, or at the most for a standard flat.

But these gondola cars are nine feet from the rails to the top of the brakestaff and are ten feet six inches wide.

So the new type of McGiffert Loader was built with the following dimensions:

The frame is nineteen feet long and thirteen feet six inches wide overall. When the wheel frames are swung up to clear the track there is a full nine feet four inches between the top of the rails and the bottom of the wheels—a four inch margin of safety.

Front view of long-legged McGiffert Loader.

The loader has four-wheel trucks with 24" wheels and a twenty-eight foot steel swinging boom so that logs can be taken from either side of the track without the use of skids or landings.

A double-drum, double-cylinder nine by ten engine with a 42"x114" boiler for 150 lbs. working pressure furnishes the motive power.

A steel tank on the rear of the engine-deck, 60"x96" in size, carries the water supply.

Now after this elongated loader had been out on the job for about three months, there came the following letter from Mr. McLean, signifying his entire satisfaction with it in operation:

McLEAN LUMBER COMPANY
(Incorporated)

Manufacturers of Hardwood Lumber

Hairston, Ala.,
Sept. 18, 1914.

Clyde Iron Works,
Duluth, Minnesota.

Gentlemen:

You will probably be interested in hearing what success we have had with the McGiffert loader built for us by you last spring, and which we are now using at Hairston, Alabama. We have now had this machine in constant use for about three months and in that time we feel justified in saying we consider this machine entirely practical. It has certainly been a big help to us and is the only known type of machine which will handle gondola cars loading from main line. We have every reason to believe that more of these machines will come into use as the expense of wiring cars is saved and in addition a considerably greater number of cars may be loaded in a day.

In the next week or ten days we

Passing Gondolas thru McGiffert Loader.

will send you a few pictures of this machine in operation which we think would be of interest to you.

Very truly yours,
McLean Lumber Co.,
Per A. E. McLean.

To this the sales manager of the Clyde sent the following response, seeking further data on the actual accomplishments of this unusual machine:

CLYDE IRON WORKS
Manufacturers of Clyde-Grade Logging, Hoisting and Excavating Machinery
Duluth, Minnesota, U. S. A.

Duluth, Minn., 9-21-14

McLean Lumber Co.,
Hairston, Ala.

Gentlemen:

We were very pleased indeed to get your letter of the 18th and thank you very much for your kindness in writing us in this way. We shall also be very glad indeed to get the photographs you refer to as we can use them to very good advantage.

At the same time, can you give us some information in regard to the quantity of logs you are loading per day, number of logs per thousand that they will average, how much you put on a car and the cost per thousand of loading? If you can give us this information, we assure you that it will be very much appreciated.

Yours very truly,
Clyde Iron Works
By J. J. Lumm,
Sales Mgr.

Mr. McLean replied with so complete and instructive an account of the entire operation that nothing could be written which would give you a clearer mental picture of the proposition.

So, availing ourselves of his permission, we reprint this letter here verbatim:

McLEAN LUMBER COMPANY
(Incorporated)
Manufacturers of Hardwood Lumber

Hairston, Ala., 9-24-14.

Clyde Iron Works,
Duluth, Minn.

Your letter of Sept. 21th has been received and we are only too glad to give you what information we can in regard to the use made of the McGiffert loader built for us by you last spring and also what our cost of loading amounts to per thousand feet.

Before doing so you might be interested in hearing a little concerning the conditions here at Hairston which prompted us to buy such a loader as you finally built for us which would be high enough to load gondola cars, thus doing away with loading from a side track.

Lay o'the Land —
Showing Yarded logs ready for the Loader

The writer arrived at Hairston last February after having spent some six months on the tract of timber owned by the McLean Hardwood Lumber Co., where Rapid log loaders are used, flat cars not being any harder to get than any other type of car, and also visiting various logging operations throughout the South. It was very easy to see at first glance that logging as done by our company at this point was quite impossible if we were to get any efficiency whatsoever, also if we were to keep the cost of operating down within reason and get anything done.

We were using an old————* machine, which in all fairness to these people we must admit was never designed for such work or to be handled by such loggers as were handling that machine; we were loading from a side track and I really dont believe we could truthfully say we were loading an average of five cars a day, 4,500 ft. to the car, as under the best of conditions it was taking half a day to move that machine from one set up to another. People who have logged in the hardwood swamps of Alabama, Mississippi, or Arkansas will understand what it means to move such a machine and the difficulties encountered in throwing out spur lines or even a short siding long enough to hold a loader, the ground being soft and covered with water in many places.

Outside of the actual cost of loading, we had to consider the extra cost of yarding logs compared to dumping them anywhere along the railroad which would be the nearest point for the teams—such costs would be rather hard to figure but no one would but admit that such a cost existed.

That we needed a good efficient machine for loading our logs there wasn't a doubt—the only question was the type of machine best suited to our purpose if there was one made, or if not, could we have one of the present types made with alterations that would. We were at least bound to load gondola cars or a good share would have to be such. Hairston is located along the Alabama Great Southern Railroad and being the iron and coal center that the Birmingham district is, one can see the number of gondola cars owned and controlled by this Railroad and the whole Queen and Crescent route; consequently the number of flats would proportionately be less.

Then the question resolved itself down to: Could we load from the

* Name eliminated by the censor.

HEISLER
Geared Locomotives

Are especially adapted for heavy hauling on steep grades, sharp curves and uneven tracks. For logging, switching and pulling on main lines, mills, furnaces and industrial purposes.

Just off the press, new detailed descriptive catalogue 108.

Heisler Locomotive Works

ERIE, PENN., U. S. A.

Virgin Hardwood at 74 cents per acre.

EIGHTY-SIX SQUARE MILES (54,000 acres) of Virgin Beech, Maple, Birch, Basswood, Elm, Ash and Spruce, estimated at over two hundred million feet. Large quantity of good-sized Cedar, sound and straight. Also Balsam and Poplar Pulpwood estimated at three hundred thousand cords.

¶ LOCATED on line of Canadian Northern R. R. in County of Hastings, Province of Ontario, Canada, 100 miles north of Trenton, from which point is water transportation to any point on St. Lawrence River and any port on Great Lakes.

Price $40,000.00. Terms if Desired.

CAPTAIN CHISHOLM
(OWNER)
British-America Hotel
KINGSTON, ONTARIO
Canada

THE
Buckbee-Mears Co.
Engravers-Designers

—an organization to be distinguished from that of the ordinary "cut house"—equipped to co-operate with the advertiser in designing and engraving sales literature of the highest efficiency—to give it a "class" and distinction which will demand attention and favorable consideration—

NEWTON BUILDING
ST. PAUL, MINN.

main line or were we going to have to set off on a spur? The advantages of main line loading hardly need mentioning, and a loader that could do such a thing did not exist. The standard McGiffert loader, built approximately three and one half feet higher and a little heavier all the way through, seemed to be an only possibility, and the writer could see no reason why such a machine could not be built.

It has, and after three months use during which several million feet of logs have been loaded, does it seem out of line to say that machine is a success and practical in every way?—No, I do not think so.

Our cost of loading logs is not so low as some other people perhaps do theirs, but under the condiitions with which we have to deal I do not believe there is another machine that will do the work as cheaply. I figure it costs us thirty-five cents or very nearly that a thousand feet for us to load, but I do believe those figures are at least correct—I have seen a good many logging figures I have doubted. I will itemize what I think our costs are:

Loaderman's salary per month	$100.00
Log scaler and grader	90.00
Fireman	37.50
Four men with hooks at $1.50	150.00
Coal and water	125.00
Depreciation per month and repairs	100.00
	$602.50

Against this, we will load an average of fifteen cars a day with say 4,500 feet to the car which is in round numbers 1,690,000 feet of logs. This makes loading cost us between thirty-five and thirty-six cents per thousand. Of course there may be some few additional items against this part of our operation but these figures seem very fair to me. These figures may vary from month to month and are based on the months of July and August only.

In this connection of costs, it would only be fair to the machine itself to explain the reason for our costs being as high as they are. First our operation, as are the majority of hardwood ones, is small and our loader is worked no where to capacity; secondly we do not ship all logs to our mill at Chattanooga and now to Birmingham, but sell our pine and low grade stuff to a small mill at Hairston and also have what gum we cut sawed for us right at the end of our tramroad. In that way we are forced to own six to eight flat cars of our own for the purpose of loading out this stuff. From this you will see it costs us practically five cents a thousand for grading and measuring our logs, which really is not a cost of loading although a thing which must be done at the time of loading, and we are forced to waste considerable time in sorting over logs. In the writer's opinion thirty cars a day could easily be loaded with this machine were it not necessary to sort or grade the logs, and all cars used were gondolas, as anybody who has ever loaded these cars understands how much faster logs can be dumped in a gondola than placed on flat cars which afterwards must be wired.

In conclusion I would like to say a few words regarding the stability of this machine; we have loaded logs having anywhere from 12 to 1200 feet log scale

Every Phase of Lumber Manufacturing Ably Handled.

THE completeness with which the ST. LOUIS LUMBERMAN covers every phase of the lumber industry, the reliability of its news items, the timeliness and value of its special articles and editorials, and the attractive way in which all these things are presented makes it what one of our readers and advertisers of long standing says; "All that it is possible for a trade paper to be."

In all that goes to make up a first-class lumber journal we consider the St. Louis Lumberman in the foremost rank.

HIMMELBERGER-HARRISON LUMBER CO.,
Morehouse, Mo.

We have been advertising in the St. Louis Lumberman for a number of years, and find it a very satisfactory medium.

SOULE STEAM FEED WORKS,
Meridian, Mass.

We regard your paper as the best lumber trade journal.

F. J. MOSS, President American Sash and Door Co.,
Kansas City, Mo.

The St. Louis Lumberman has been one of the most valuable newspapers for the advertising of the southern mill operators.

DIERKS LUMBER & COAL CO.,
Kansas City, Mo.

We consider your paper one of the most up-to-date, trustworthy and reliable papers of its kind published.

CROWN LUMBER AND SILO CO.,
Omaha, Neb.

We congratulate you on the continued growth and usefulness of the paper, and we are free to confess that its effectiveness as an advertising medium has been well borne out in our experience with it during the past eighteen years.

HALL & BROWN WOOD WORKING MACHINE CO.
St. Louis, Mo.

I consider it all that a trade paper can possibly be.

C. D. JOHNSON, President of Frost-Johnson Lumber Co.,
St. Louis, Mo.

The business we have been able to trace as the direct result of our advertising is very satisfactory, and our Purchasing Department finds it almost indispensable as a reference book.

LOCK, MOORE & CO., Ltd.
Westlake, La.

We are more than satisfied with the paper as an advertising medium, and are glad to renew our contract with you.

BERTHOLD & JENNINGS,
St. Louis, Mo.

We have always looked upon the St. Louis Lumberman as being the best paper published in the industry.

CENTRAL COAL AND COKE CO.,
Kansas City, Mo.

We have always considered the St. Louis Lumberman the most valuable advertising medium, inasmuch as it reaches the retail trade, and especially the South and Middle-Western territory.

W. R. PICKERING LUMBER CO.,
Kansas City, Mo.

I am reading all the principal lumber trade papers and mean no flattery when I say none of them is giving as much valuable information to the general lumber trade as yours.

H. C. SCEARCE, Sec'y, Retail Lumber Dealers',
Association of Indiana.

All trade papers are beneficial to the lumbermen. but you have brought your paper to the standard where there is no use denying the fact that it leads them all.

PHILLIPP OTT & SON,
Jefferson City, Mo.

Published twice a month. Subscription price $2.00 the year. Sample copy and advertising rates sent on application.

The LUMBERMAN ST. LOUIS

LUMBERMEN'S BUILDING, ST. LOUIS, MO.

DO YOU OWN A TREE?

Do YOU know what it is, how to care for it, what it is worth and what to do for it whether you own one tree or thousands of them?

The American Forestry Association, a public-service, non-commercial organization, working for the benefit of tree lovers and tree owners, desires to send you some literature about trees,—you will find it valuable.

Send your name and address and specify whether you have a few shade trees, a woodlot, a well wooded country estate, some timberland, or whether you just love trees.

American Forestry Association

Washington,
D. C.

in them and have gone back four hundred feet after them; however, perhaps no one doubts but what the machine is all right while loading but is under the impression it would be top heavy when it came to moving. We do not think so and have probably moved it four or five times a day on an average, and have probably covered two hundred miles with it in the time we have used this machine. It will ride any ordinary log railroad with absolute safety, and we will be glad to have anyone interested in this machine come to Hairston at all times for the purpose of seeing it in operation.

Kindly feel at liberty to use this letter and information contained here in any way you may so desire, and we will be willing to take persons interested in logging out to see machine in operation. However we would appreciate hearing from any such persons a day or so in advance so that we might be in shape to extend all possible courtesies.

Very truly yours,

McLean Lumber Co.,
Per A. E. McLean

P. S. Our logs will average five to the thousand.

We are indebted to Mr. McLean also for the excellent pictures which illustrate this article.

Men and Jobs.

A logger sat on a pile of logs
And wished his job to the doggone dogs,
But a better man took the job instead
And the grouchy logger—well, he's dead!

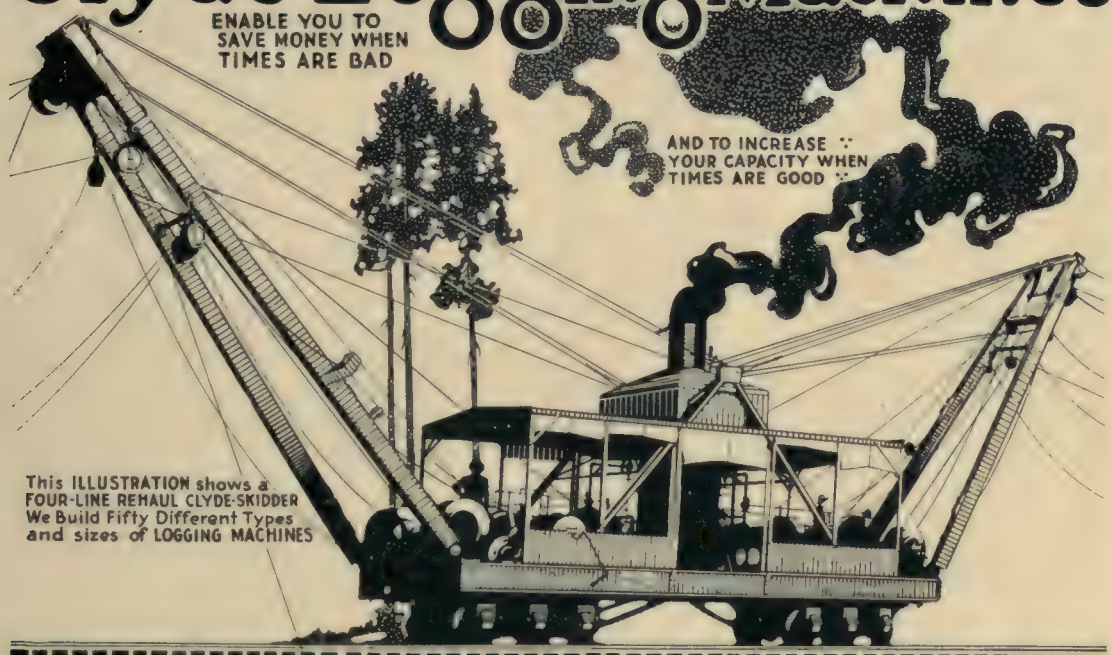
Now the point is this—and its sharp and true—
The job is nothing but work and you:
The work's all right if you make it so;
If it's not, well you are the reason, bo!

C. HENRY.

Clyde Logging Machines

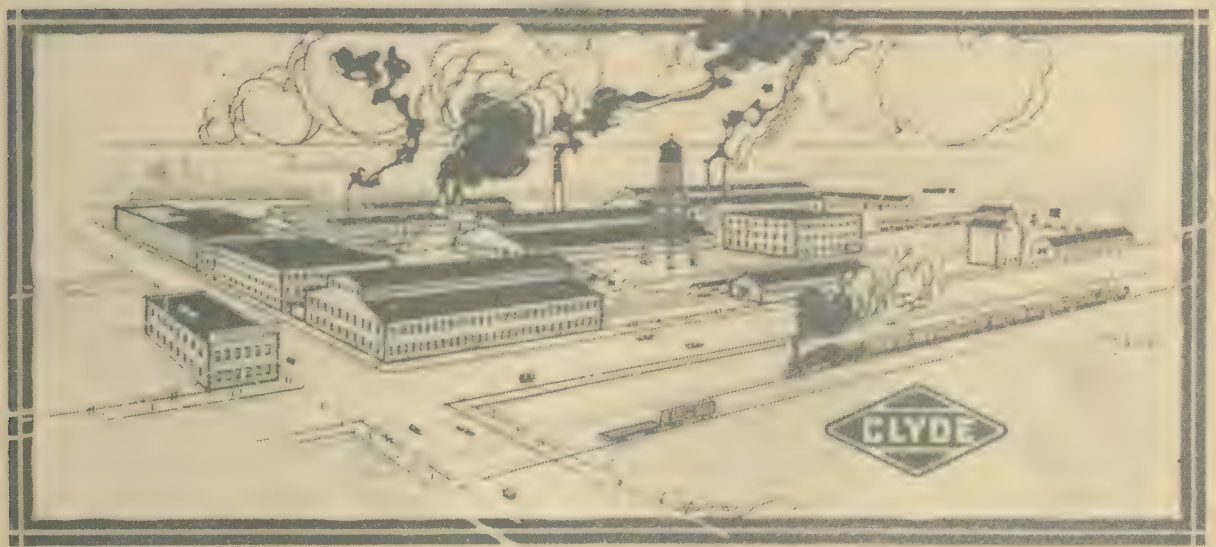
ENABLE YOU TO SAVE MONEY WHEN TIMES ARE BAD

AND TO INCREASE YOUR CAPACITY WHEN TIMES ARE GOOD



This ILLUSTRATION shows a FOUR-LINE REMAUL CLYDE-SKIDDER We Build Fifty Different Types and sizes of LOGGING MACHINES

CLYDE IRON WORKS MANUFACTURERS of MACHINES for EVERY LOGGING OPERATION.
DULUTH, MINNESOTA, U.S.A.
NEW ORLEANS CHICAGO HOUSTON SAVANNAH MEMPHIS PORTLAND



"There's No Place Like Home"—Page 34-36.

American Lumberman

CHICAGO MAY 31, 1913

A SELF-MADE CANADIAN

READ IT, because—

You get it *every week.*

It will keep you posted on markets, *every week.*

It will give you the news of the entire lumber world, *every week.*

It contains dependable and authoritative editorial comment and opinions on matters of interest to the lumber trade *every week.*

Its many departments and special articles provide a veritable compendium of instructive, informing and entertaining lumber miscellany, *every week.*

Its able staff of editors, reporters and correspondents, and its exceptional news gathering facilities enable it *every week* to present such a comprehensive and dependable review of all matters pertaining to the lumber trade as to have earned the title of "World's Greatest Lumber Paper".

ADVERTISE IN IT, because—

It reaches practically ALL the trade.

Its advertising pages are considered the leading directory or guide to "Where to Buy".

It will give you MORE circulation than any two other lumber papers combined.

It will give you BETTER circulation. The average credit rating of its subscribers exceeds $100,000 each.

You will get inquiries from firms who will make the most desirable customers, many of whom could not be reached through other media.

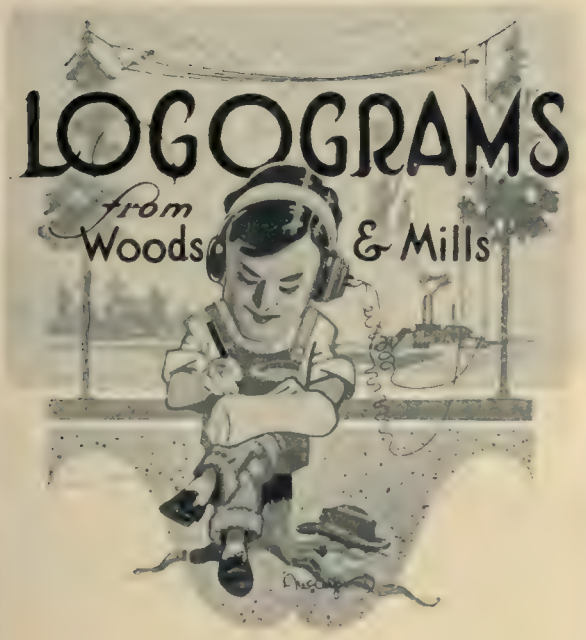
Its thousands of readers BUY it and pay $4.00 a year for it IN ADVANCE, thus guaranteeing a bona fide circulation among people who want the best and have the means to pay for it.

Ask for sample copy and further particulars.

American Lumberman

World's Greatest Lumber Paper

CHICAGO



LUMBER COMPANY BUILDS BANK AND SCHOOL

The East Coast Lumber Company of Watertown, Fla., has recently organized and erected the Watertown Bank with a capital of fifteen thousand dollars.

J. L. Edwards is president of the bank, John Jay Paul and H. S. Bean are vice-presidents and L. D. Lea is cashier.

The bank building is of brick and contains two stories, the upper one of which is devoted to doctors' offices and operating rooms.

This same company has also recently built and furnished a two-story school building for the benefit of their employees' children.

The upper story of the school building will serve as a lodge room and ball room when occasion demands.

FLEISHELS FLY FROM FLORIDA

Mr. M. L. Fleishel, manager for the Carpenter-O'Brien Company, and his family have recently returned from a two month vacation at Atlantic Beach, Florida.

The Log Gink is saving up to take his family to the same place next summer.

OUT OF THE MOUTHS OF BABES

Now they tell this tale about the manager of a large southern hardwood mill who imported an aviator to amuse his employees on the last fourth of July.

His idea was to have the human bird give a few exhibition flights all by his lonesome; but one of the stunts required a passenger.

Naturally enough, the aviator couldn't afford to take anyone over the manager's head, and so he selected Our Hero as his victim.

BUY THIS BOOK!

——Buy it with a post-card and a one-cent stamp and three seconds of your time.

It sums up our years of experiment—observation—inference in the line of clearing logged-off-lands.

If you own or are interested in logged-off lands; if you want to move them at a profit; if you want to MAKE THEM PAY:———THEN———

BUY THIS BOOK

—at the cost of a request for it.

Say "Steam Machinery" told you about it—THAT'S ALL!

Clyde Iron Works

DULUTH, MINN.

U. S. A.

A postal or letter giving your address will bring you specification blanks which will be of use in sending inquiries for springs.

A 75 per cent Saving in Lubrication

S H A F T E N E

Save money, time, machinery and labor. Sent on 30 days trial, no charge for amount used if SHAFTENE fails to solve your lubricating problems. Ask for list of satisfied users. Manufactured and sold O N L Y by

THE TROPICAL OIL CO.
CLEVELAND, OHIO

51,000 BUYERS OF LUMBER.

The Southern Lumberman's "Directory of Lumber Consuming Factories" contains the names of every factory consuming lumber, every wholesale lumber dealer, and every retail lumber dealer in the United States, as well as every lumber consuming factory in Canada. For the factories in the United States data is given showing just what lumber they use, what grades and sizes.

One of the largest lumber companies in the country writes us: "We do not see how any up-to-date concern could afford to be without it."

The price is $15 per copy, and the book will be sent on ten days approval to any responsible concern.

Contains 912 pages of accurate, up-to-date information of incalculable value to the lumberman.

PUBLISHED ONLY BY

Southern Lumberman
Nashville, Tenn.

As he alighted from the aeroplane after his trip thru the cloud country, a small and irreverent boy among the audience was heard to remark:

"Well, I reckon that's as close to Heaven as the Old Man will ever get!"

EDITORIAL NOTE: Name furnished on request, as they say about the testimonial letters in the ad. section.

ANOTHER LOADING RECORD

While the Log Gink was visiting Weed which is in California they told him of a loading stunt which is well worthy of comment in this column.

W. R. Hopkins, one of the camp foreman for the Weed Lumber Company, is the hero of the episode.

Hopkins handled three hundred five thousand feet in eight hundred seventy logs, loading fifty-three cars, in eight and a half hours!

And these logs were yarded beside the track by Big Wheels but not decked ready for the loader.

—Some loading!

PELICAN PEOPLE PLAGIARIZE PHOENIX

The Pelican Bay Lumber Company is rebuilding the mill at Klamath Falls, Oregon, which was recently destroyed by fire.

The new mill is to be a double band outfit and will be better and bigger than before.

Mr. Mortenson is manager for this company.

NOTES FROM NEW ORLEANS

H. G. Loyd, is now foreman on the four line Clyde Skidder for Scotch Lumber Co., Fulton, Ala., and is doing very nice work.

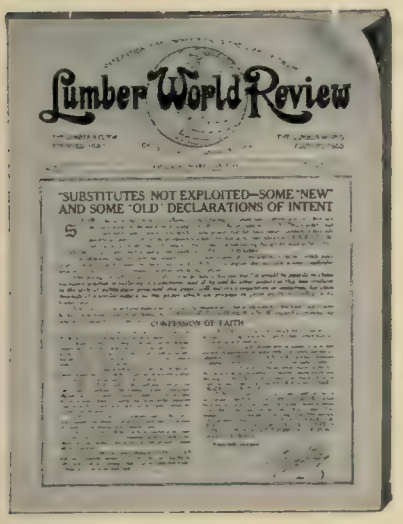
Oscar Marsan is back in harness again. After about a three month's vacation Oscar started up the Opdenweyer-Alcus pull boat operation at Clio, La., on Sept. 1st. From latest reports received, we understand Oscar has not lost his batting eye, as the logs are coming in the Amite River in old time form

---

Billy Alcott, formerly with Brown Roberts Hdwe. & Supply Co., and now moving picture magnate at Oakdale, La., knows how it feels to be held up. Bill was in New Orleans recently and while rambling around after dark was held up by highwaymen in a public park. To hear Bill tell it, he would want you to believe that he put up a fight. but we believe the recent atmospheric disturbances around New Orleans are due to the trembling exhibit by Bill while the robber went through his pockets.

The world needs you or you wouldn't be here, but you would never believe how splendidly she will get along without you.

"Experience With A Cable Tram Road"



WOULD you like to know the experience some men have had with a cable tram road?

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A RELIABLE SOURCE OF SALESMANSHIP IN PRINT

DULUTH:—"Great Port of the Northwest."

Vol. 2. No. 12.

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A MAGAZINE OF MEN, MACHINERY and METHODS; PUBLISHED MONTHLY BY THE STEAM MACHINERY PUB. COMPANY at DULUTH, MINNESOTA U.S.A.

FOR THE LOGGER, THE CONTRACTOR, THE EXCAVATOR AND THE RAILROAD BUILDER

FOURTH ANNUAL CONVENTION
SOUTHERN LOGGING ASSOCIATION
NEW ORLEANS. 1914

A Monthly Magazine of Men, Machinery & Methods

STEAM MACHINERY

DULUTH MINN.

Charles H. Mackintosh Managing Editor

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We absolutely and unconditionally guarantee never to publish in our columns advertising matter of a fraudulent or misleading nature, nor to accept copy from any firm whatsoever until we are satisfied beyond all possibility of reasonable doubt that such firm is in a position to live up to the letter of its proposals and has done so consistently in the past. This we do, not because we are better or more moral than other magazines of our day, but because we conceive the true purpose of a magazine to be service to its readers, and we would serve well in order that we may be well served.

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NEXT MONTH WE CHANGE OUR NAME.

This is the very last copy of "Steam Machinery" you will see.

When we reach you next month—as we will, just as we have for the past two years—you will find us with a new name and a new suit.

We warned you in our number for July last about this coming change and at the same time announced that henceforth and forever we would be devoted exclusively to the interests of manufacturing lumbermen who do their own logging and of all engaged in the great industry of logging.

Our next issue, then,—the first for nineteen fifteen—will bear the new name

LOGGING

There will be a new and—we believe—very clever cover design done in oils and by four-color process.

There will be a new and striking frontispiece and there will be newly designed tints thruout the body of the magazine.

And the reading matter also will be crowded up a notch or so for the new year. We have perfected arrangements to get more material from the men behind the machines, dealing with skidding and loading practice and with all the many phases of modern logging.

Our artists will continue to do at least as well as in the past—you know there really isn't room for much improvement in this department.

One thing we have found—it cost us nearly three times as much to produce and mail "Steam Machinery" as we got for it.

And so we have raised the subscription price of LOGGING to Two Dollars Fifty Cents the year—but you should worry about that!

THE PUBLISHERS.

The Editor Thinks

THE eastern hemisphere may be at war, but in America we have Peace and plenty of Goodwill towards all men with a few possible exceptions. ¶ Also we have our most colossal crop since Washington unwound our leading strings. ¶ True, we are by no means unaffected by the plight of our neighbours around the corner of the world. ¶ Our export trade has been choked into semi-unconsciousness and our home markets have been glutted with the surplus, until many of us have shut down our mills and plants to wait for business and better prices. ¶ But our plants are still standing and none of our cities have been shelled. ¶ We can go to church on Sunday without risking sudden dissolution by the Zeppelin route. ¶ As we walk to work or worship we don't have to keep one eye cocked on the road for the automobiles of our friends and t'other on the sky for the aeroplanes of our enemies. ¶ Nor need we suspect our butcher of being a German spy and putting Prussian (sic) acid in the pig's feet. ¶ Our railroad bridges will not be blown up and, if we are reasonable with the railroads, they will be renewed before they blow down. ¶ No one of us is in any immediate danger of being called a coward because he does not care to creep up behind Otto Schmidtzell and blow his brains out with the butt of an army rifle. ¶ Our food supply flows to us from our own farms where there is plenty of it and lots of labor to handle it. Nor will any troops be quartered on us to consume our shares. ¶ There are no hostile warships in our waters, no armies entrenched among our harvests, no death-dropping aircraft above our cities; we have no kings to blame it on and nothing particular to blame on them if we had; our women are safe, our children are happy and: —— —— —— ¶ Christmas is coming! ¶ Already every little boy and girl—and many a bigger one—throughout the domains of Nunkie Samivel has commenced to count the remaining days before The Day. ¶ "Four days more, three days more, two days more, and then—the day before Christmas!" ¶ If the good really died young there would be few youngsters left by midnight on Christmas Eve:—ninety and nine per cent would have qualified so quickly for a harp and a halo! ¶ But, in reality, this is another of those old mistaken maxims which should have a maxim silencer screwed onto it in these modern days of Mars. ¶ Only the bad die young, except by accident. ¶ Nature never intends disaster and death to anything useful; so goodness, in its real and full meaning, is the best possible life insurance. ¶ To be good we must *do* good, and so neither Nature nor Man will want us to quit. ¶—But now let us come back to Christmas! ¶ This is the season when even the grouchiest and glumest among us is tempted to take out a little of that life insurance. ¶ It appeals to our sense of self in that we don't have to wait until we are dead to draw dividends. ¶ Such delightful dividends too! ¶ Not paid in any of the Three C's—Cash, Currency and Checks—but in *all* of the

Three L's—Love, Labor and Laughter. ¶ And everybody knows, at Christmas if at no other time, that the only thing the Three C's are any good for is to be turned into the Three L's! ¶ There is little danger, this year, that the supply of Christmas life insurance will be over-subscribed, so all of us will be able to take all our hands and hearts can hold. ¶ For there are a great many in our own country who have been deprived of the right to labor by this murder-madness on the other side of the world. ¶ And, if these at home are not enough to absorb our supply of Christmas happiness, then there are the women and children of the belligerents—and the belligerents themselves indeed, for this is Christmas and, besides, they know not what they do. ¶ But the children come first, of course, for Christmas really belongs to them. ¶ And there will be millions of Christmasless kiddies if we, who are at peace, who are happy, healthy and unfraid, do not seize this splendid opportunity! ¶ We have sent a Red Cross ship to Europe—why not a Christmas Ship as well, or a whole fleet of Christmas ships (if we can find capacity for so much happiness) sailing under the command of old Saint Nicholas? ¶ "Gifts from the land of Peace and Liberty to the children who must pay the price of this War."—For the children *always* pay the price of War, now and forever. ¶—Just a dream, of course, but you couldn't call it a nightmare exactly, could you?

FOOT NOTE—Since the above was written we understand that someone in Chicago had the same dream and woke up in time to put it to work.

△ ⊢▽ ♂

FOR THE SECOND—and LAST—time, S. MacHinery wishes his readers a worth—while Christmas. ¶ May you all have even more happiness than you bring to others, and may this coming Christmas Day live long in your memories as a day of laughter and labors of love. ¶ S. MacHinery himself is dated to die with the outgoing year. ¶ "Salve et Vale!" Greetings and Farewell! he says to you thru the editor. ¶ He puts it that way to show that he hasn't mislaid *all* his Latin since he was a pup, but he means well enough,—and he will be dead in a few days anyhow. ¶ But he isn't worrying about it very much, because he has already arranged to be reincarnated as the Log Gink—a gentleman with whom you will become quite well acquainted during the years to be. ¶ Meanwhile, the editor and S. MacHinery unite in willing you a share of every good Christmas thing.—May you also will it!

△ ⊢▽ ♂

THE GENTLE ART OF GIVING is in some danger of dying out from among us in these days of department stores and such. ¶ Formerly Auntie and Sister—somebody's sister—would work a week on a knitted comforter, a painted vase, or some such sublime art object (but why should Art object!) producing what could not be purchased in any store. ¶ They knit or painted *themselves* into the gift, so that every time you wore or lookt at it you could not but think of them. ¶ Nowadays they beat it to the bargain counter and buy a set of Carlisle or the DuBarry Memoirs, giving one book to each of a dozen dearly beloveds. ¶ Or else they contract for a case of assorted mufflers, glove-boxes, shaving-soap, toy engines, cushion-tops, socks and neckties, holding a packing-bee later to get the junk off on time and sending the socks to Cousin Lucy, the shaving soap to Grandma, the toy engine to Uncle Hez and the cushion top to Bud Billie. ¶ And, which is more, they put in an Accounting System to keep tabs on the Returns,

charging off profit and loss according to how the recipients of these bargain-counter gifts come across in return. ¶ If you dont come across a tall—yours for a one cent Xmas (spelt with an X) card next year! ¶ If you come across with a twin bargain—dont call for a month at least. ¶ But if your come across with five hundred per cent clear profit, your reputation will be made for all the rest of that day. ¶ Now there's no sense and less science in such giving. ¶ The idea in giving someone something is to make that someone develop a Warm Spot for you. ¶ And people dont get the right kind of an Inward Glow when you give them something upon which you have obviously expended no thot, little time and less money. ¶—Not that the money matters so long as the gift glows with the thot of the giver. ¶ It's only when the gift is cheap as well as ill-chosen that its money value cuts any figure—and then it serves simply to accentuate how durned little the giver thot of you! ¶ Put a little of *yourself* into every gift you make this Christmas! ¶ Let the traces of your hands or mind shine thru them and prove your genuine goodwill. ¶ And your reward shall come not in costlier return gifts but in the kindly thots your own will stir up for you in the hearts of your friends.

△ ⊢▽ ♂

THE SMALLEST LETTER in the alphabet is the biggest word in the English language. ¶ It means more to most people than everything else in the universe combined. ¶ "I"—how modest it looks and how immodest it is! ¶ It is less than half the size of "U"—and not less than twice as potent in jarring men's gray matter into action. ¶ It is the keystone in the tower of evolution, the mortar holding every part in place: of it is woven the warp of our social fabric wherewith we hang the great grey walls to hide their ugly angles. ¶ Men are and always have been egotistical; were it not for this how evolution would have lagged along the centuries! ¶ Men always will be egotistical; but, as the years roll on, accumulating experience which is knowledge, they will learn to be spiritually egotistical rather than physically. ¶ From being made uncomfortable by personal hunger and thirst they will pass to being made uncomfortable by the knowledge of others' hunger and thirst—and shortly after that there will be neither hunger nor thirst in all the world. ¶ Beyond this again, they will learn to hunger and to thirst after intellectual, moral and spiritual growth and, having satiated themselves, will acquire the keen sense necessary to suffer for the lack of these in others. ¶ Then they will right that also. ¶ Man is so interlockt with his kind that he cannot take a single step along the path of progress without encouraging or daring some other to do the like and follow—if only not to be beaten! ¶ The gain of one will always be the gain of all and the gain of all the gain of God. ¶ Let us speed that day when all shall know it for the truth that *no man can be thoroly happy until no man is unhappy*. ¶ For this is the end of our next period in evolution—to be attained, as in the past, thru the driving guidance of supreme and splendid egotism.

△ ⊢▽ ♂

¶ Man was made to be an ego, not an echo.

¶ Talking about Conservation reminds some people that a forest is only lazy lumber:—they want to wake it up with a saw and set it to work.

¶ The turpentine people have found a way to turn even the forests scents into dollars.

SOUTHERN LOGGERS CONVENE IN CONCRETE CAVE

Fourth Annual Meeting of S.L.A.
Reported for STEAM MACHINERY
by
S. MacHinery
Who Gives Hereunder a Complete Account of All Conventional and Unconventional Acts and Deeds Done Thereat

THE Grunewald Hotel is surrounded on all sides by the city of New Orleans.

The hotel itself surrounds the Tin Forest and the Concrete Cave.

Now the first of these might have made an entirely appropriate place for a convention of Forest Engineers, but it was reserved for feeding purposes only.

The regular convention hall was in the hands of the National Association of Funeral Directors, with whom no one cares to associate before he has to.

There remained then, as a possible place of convention, only The Cave.

The Cave is done in concrete and is decorated with putty ladies and petrified nightmares.

Its roof is hung with alleged stalactites, weighing many pounds apiece, which seemed prepared to let go all holds at any moment.

I dont believe any of them have ever done so, but neither did the sword of Damocles—and Damocles did worry!

Besides, these stalactites will catch the conversation and detain it until it is too late to be of any value.

But if you wanted to hold a convention in the Grunewald during October 26-27-28 you had to hold it in The Cave because else there was no place to go.

And the S. L. A. did desire to convene in said hostelry during said space of time and so were compelled to convene in the Concrete Cave.

—Which brings us back to our beginnings.

Big Boss Baker could not come because of Fate in the form of a fire in his planing mill and First-Assistant Myers was turning Texas inside out until further orders should become revealed.

And so Second-Assistant Oscar Marsan gripped the gavel and knockt the cap offen the Convention, with some five score members already in their apportioned places.

At once there bubbled forth the President's Opening Address, which, in the absence of its author, was declaimed by Brother Boyd, Secretary-Treasurer of the S. L. A. and also its paternal progenitor.

—Thus spoke President Baker thru the mouth of Brother Boyd:—

PRESIDENT'S ADDRESS

Time passes; wars are in progress; business lagging, especially in lumber but I see that logging is still interesting and, no doubt, expensive.

I see before me many men, who have been coming here each year, trying again for "cost lowering" methods. I also see men who have been successful in the past in getting information that has saved them many dollars; also saved them many hours of hard labor and days of anxiety. You have not only been coming to these meetings regularly, but you have been putting into practice some of the lessons that you have learned from the experiences of your brother logger.

This association has been and will continue to be one of the greatest money savers that the lumber industry has financed (and, by the way, I do not suppose there ever

C. P. MYER
KIRBY LUMBER CO.
New President of S·L·A·

was another organization that has saved as much money, and cost so little per 1,000 feet.)

By referring to the proceedings of the Hardwood Manufacturers' Association of the United States of January 21, 1914, you will see that we have gone out of the original pine and cypress idea, and that the hardwood people want to become a factor in this good work, and, as discussed at our last meeting, we expect to devote some time to the hardwood men.

I find that a large per cent of the pine operators have begun to market their hardwood timber, and the experience of the hardwood logger will not only be interesting to the pine and cypress loggers, but very beneficial.

MORE NOW LOGGING ALIKE

Some operators have refused to take any part in these meetings, because they think their logging is entirely different from the other fellow's. Five years ago, in many instances, this was so, but I am glad to say that today there are many more men doing their logging in the same manner than prior to their first attendance at these meetings. There are hundreds of little ways and means of saving that we can get, both from the man who hunts for mahogany in Central America and the man who hauls his logs on snow sleds in Maine.

It is not always the big items where we make our savings, but in stopping the small leaks and losses, and we can nearly always find one when the other fellow gives his experience and costs in detail.

At our first meeting there were quite a number of men who gave their costs about as follows:

Cutting and hauling.... $2.00 per M
Loading and railroad... 1.90 per M

and this was about all they had to say on costs. A few said their logs were costing them so much delivered at the mill, but these same men came to the next meeting with a detailed cost sheet, took their seats on the front row, and had their heads full of questions to be asked and answered. Some of the livest wires at our last meeting were men who had very little to say at the first.

OSCAR MARSAN
Presiding Officer
Nineteen Fourteen
S. L. A.
CONVENTION

Some of these fellows were afraid to talk, for fear some one else know more than they, but they soon forgot their embarassment and asked and answered questions as though they were telling some mule skinner where he had left a top log. This freedom of speech, which has prevailed at all of our meetings, will be felt at this one, for every man has felt the need of the other fellow's experience.

I am sure that each man here would like to have information on some special subject and, in many cases, your wants may be identical. Now to save time, if every man would write on a piece of paper his special subject and give it to the secretary, we may be able to condense them and cover each subject thoroughly and to your entire satisfaction in much less time than if you waited for your opportunity to get on the floor.

LESSONS FROM DISCUSSIONS

I know that in all discussions you will have brought to your minds many things you had overlooked before leaving home and, when you find this to be the case, jot it down, and call our attention to it.

There is no meeting that is greater than the greatest benefit received by any individual and, to make this the best meeting, each man should strive to get all the help he can.

In the past, the great majority of those in attendance have stored most of the ideas they received in their heads and, later, when asked what they had learned at these meetings, their answers have been rather vague. Now at the very beginning I want each and every man to try to keep a memorandum of everything he hears which is news and will be a help to him in his work, so that when we adjourn you will be able to show on paper some of the benefits you have received.

By referring to the program, you will note that we have arranged for a three days' session. In the past we have been rushing through and trying to do the work in two days, taking the third day for sightseeing and pleasure, but I believe that we can find plenty to talk about to keep us here for a week, so let's all put our shoulders to the wheel and do hard work for these three days, and

JAMES BOYD
Secretary S·L·A·

I am sure that the pleasures will follow after you get home.

For the past several years I have been talking to and writing for this association and, to tell the truth, I have just about said and told all I know, and no doubt, you all would be glad to hear some one else talk.

I thank you all for your hearty support and assure you that all of these meetings have given me much help and knowledge for handling the logging work successfully.

After the applause had abated, Brother Boyd went on to give his own address and report as Secretary-Treasurer of the association.

And hereafter follow some particularly pleasing and pertinent paragraphs therefrom:

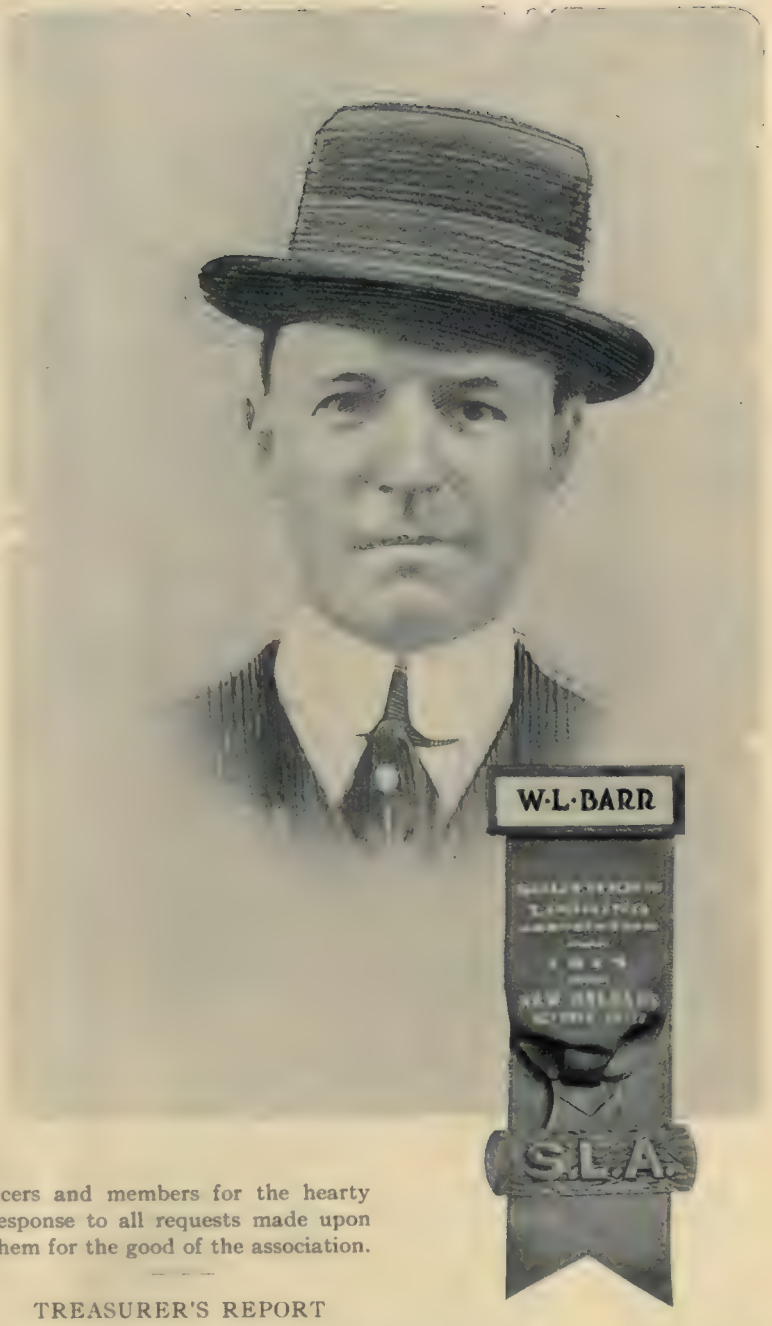
JAMES BOYD'S ADDRESS

The Southern Logging Association is now celebrating its fourth anniversary. When the first meeting was held there had been no means in existence for an interchange of experiences in logging work, although the general opinion was that logging cost too much. The second and third meetings showed that the association had been of greater service, for the attendance was larger and the testimonies of helpfulness were many. Since the 1913 meeting there have been received into membership 25 lumber companies.

In January your secretary was invited to address the annual meeting of the Hardwood Manufacturers' Association of the United States, at Memphis, on the subject of the association. An entire afternoon session was given up to logging, the president remarking that the attendance was the largest of any afternoon session in the history of that organization. Several hardwood concerns joined the Southern Logging Association.

It is apparent to your secretary that a special meeting should be held at a point centrally located to reach the hardwood loggers. But it is expensive to travel and your officers who attend such meetings should be reimbursed their expenses, when there is money in the treasury. The only expenditures of the association are those necessary to get printed matter to lumber companies. Our mailing list has expanded so we are covering Texas, Arkansas, Louisiana, Mississippi, Tennessee, Alabama, Florida and Georgia.

Your secretary takes this occasion to express his gratitude to the officers and members for the hearty response to all requests made upon them for the good of the association.



TREASURER'S REPORT

Your treasurer submits the following report of receipts and disbursements:

Balance on hand September 27, 1914	$162.28
Received from annual dues	505.00
Total receipts	$667.28

DISBURSEMENTS

Exchange on bank deposits	$2.50
Stenographer	66.90
Stamped envelopes	102.60
Printing pamphlets	82.25
Stamps for pamphlets	30.00
Hardwood meeting pamphlets	28.50
Letterheads	18.50
Cabinet and supplies for mailing list	12.70
Reprints feed article	3.50
Notices of 1914 meeting	8.75
Programs	18.50
Postage on programs	17.00
Total	$391.70

Receipts	$667.28
Disbursements	391.70
Balance on hand October 26, 1914	$275.58

Respectfully submitted,

JAMES BOYD.

W. W. Ashe, Forest Inspector for U. S. Forest Service, was scheduled next to render some remarks on "Small Timber & Logging Costs."

Mr. Ashe also was absent unavoidably and so Brother Boyd was once again called on to sacrifice his throat to the common good.

This he did without showing a sign of the strenuous strain, reading somewhat as follows:

Small Timber and Logging Costs from Profit Standpoint

(By W. W. Ashe, Forest Inspector, United States Forest Service.)

While the various elements of logging costs are in the main thoroughly systematized there is one phase which is generally neglected but which it seems desirable should be more carefully analyzed on account of its bearing upon a certain aspect of forestry. This is the relation of the cost of manufacturing lumber from small trees to the value of the lumber from these trees and to the increase in the overhead charges. It is commonly held that while the small timber is logged and milled at a loss, considering its sale value, its tonnage added to the aggregate sufficiently reduces the cost of this portion of the operation and the overhead charges to render its logging profitable.

There are too many elements of cost and their counter-relations are too intricate to admit of generalization. It is an important problem for the operator to consider when the cost of operation is high since in such cases trees of small diameters may be operated at an actual loss. It becomes less important as the margin of profit increases since trees of all diameters may yield a profit, though that of the smaller trees may be slight. This problem is especially opportune at present when there is a rapid accumulation of lower grades of lumber, which are the slower selling stock. When it is necessary to reduce output and yet continue to operate in order to meet accumulating overhead charges, it seems desirable in many cases to leave these trees, since it is the thrifty small trees which make the highest rate of increase in value, not only by increase in volume but by increase in price and quality as well.

In order to obviate a martial array of figures, calculations have been omitted and they are unnecessary, since my conclusions are that each operation, involving different costs of logging, different amounts of overhead charges, and varying percentages of small trees, must be handled as an individual case. The tension zone between loss and profit must be determined by the woods foreman, mill superintendent and office, and the forester can advantageously be consulted from the point of view of the future profits of the small material. They must jointly determine the profit or loss in operating trees of each diameter class according to the relative profit contributed by each class.

Three Elements in Problem

This problem consists of three elements:

(1.) The cost of logging (omitting railroad construction) and milling trees of different diameters.

(2.) The effect of decreased output upon overhead charges, including in overhead charges all construction.

(3.) The relation of (1) and (2) to the selling price of the product.

To determine (1) it is necessary to take the relative time of felling, bucking, nosing, snaking, skidding, and sawing and stacking the lumber from them. Since logs from trees of small diameters are frequently snaked and hauled only in connection with large ones this must be fully weighed. In the case used as an illustration logging is entirely by team. Its cost consequently is

high while the overhead charges (having no railroad construction) are abnormally low.

When woods operations are paid for by the Doyle or Doyle-Scribner or other log rule, the relation of this scale to the mill over-run above or scale must be determined. When the woods operations are by day labor this is not necessary. Table (1) gives the mill cut and log scale for the Decimal C (Scribner) rule, for Doyle-Scribner (or Doyle) rule, and the value per 1,000 board feet of the lumber sawed from trees of different diameters.

To determine (2) it is necessary to ascertain what percentage of the output of the mill which would be contributed by the accessible trees of each diameter class, and calculate the increase in the overhead charges by not cutting the trees of any diameter class. This increase in the rate of the overhead charges is at more than the rate of curtailment in output. If, as examples, the output decreases one-half, then the overhead charges, being a fixed amount, doubles per 1000 board feet; if the decrease in output is 10 per cent, then the overhead charge increases 11 per cent. In overhead charges are included salaries, interest, amortization account, railroad and spur construction, repairs, profits, etc. Overhead charges can be handled as a flat rate per 1000 board feet or they can be pro-rated among the different diameters (as has been suggested by R. C. Hall and Dean W. Martin for determining stumpage value) on the difference between logging and milling costs and the selling price of the lumber from trees of different diameters.

In connection with (3) the selling price of the lumber sawed from trees of each diameter must be obtained. The value of the output increases slightly as the products of the trees of small diameter are eliminated.

There are two components of cost which are not enumerated above. One is stumpage which can be considered as a fixed amount for trees of each diameter, regardless of the value of their product, or it can be pro-rated as was suggested for overhead charges. The other "piece charges" is certain fixed charges per 1000 board feet, such as handling, sorting, grading, loading, insurance (on lumber), commission, and discount. These items vary proportionally with output and are added as a fixed charge per 1000 feet.

EXPLANATION OF TABLES

Table 2 shows for the stand given in Table 1 and in an operation conducted by the Doyle-Scribner rule

TABLE 1.—Volumes of trees of different diameters and heights according to log rules and mill cut; per cent of mill cut yielded by all trees of each diameter; value per 1,000 board feet of lumber from trees of each diameter.

Average diameter breast high (inches)	8	9	10	11	12	13	14	15
Total height (feet)	61	67	72	77	82	85	89	92
Average number of logs per tree, 16-foot	1.5	2	2.5	2.75	3	3	3.5	3.5
Volume, Doyle-Scribner (board feet)	4	11	23	35	57	78	109	142
Volume, Scribner (board feet)	21	38	57	76	91	130	168	204
Mill cut, ¼-inch kerf (board feet)	31	49	68	92	109	131	165	199
Per cent mill cut yielded by trees	0.005	0.005	0.0075	0.01	0.04	0.08	0.17	0.17
Price per 1,000 board feet of lumber f. o. b. at mill	$14.25	$14.53	$14.84	$15.17	$15.55	$16.00	$16.52	$17.12

Average diameter breast high (inches)	16	17	18	19	20	21-25	26-30	Ov. 30
Total height (feet)	93	98	100	102	102	104	106	108
Average number of logs per tree, 16-foot	3.75	3.75	3.75	4	4	4.5	4.5	4.5
Volume, Doyle-Scribner (board feet)	180	237	280	336	402	74	1,100	1,500
Volume, Scribner (board feet)	237	285	334	383	434	740	1,100	1,500
Mill cut, ¼-inch kerf (board feet)	237	285	334	383	434	740	1,100	1,500
Per cent mill cut yielded by trees	0.15	0.12	0.08	0.05	0.03	0.045	0.025	0.0125
Price per 1,000 board feet of lumber f. o. b. at mill	$17.75	$18.36	$18.70	$19.35	$19.65	$20.20	$21.00	$21.50

the increase and decrease in woods operation and sawing costs; the increase in the overhead charges; the total cost of production and the selling price of the product.

The salient fact is that in the case submitted the decrease in woods costs scaling by the Doyle-Scribner rule are not sufficient to counterbalance the increased overhead charges. This is due to the enormous over-run of the mill-cut above the Doyle-Scribner rule in the case of the smaller trees, which largely offsets the high cost of logging the small trees and the higher cost of sawing them into lumber.

On the other hand if the woods operations are paid by the day or if the operation is conducted by the Scribner or as in national forest operations by the Decimal C log rule, there is a more rapid increase in the cost of operating the small diameters, as is shown in Table 3 in which relative costs are given with the logging paid for by Scribner log rule. The average cost of logging and cutting to eight inches is the same as by the Doyle-Scribner rule, but the distribution of the cost among the diameter classes is different, and since there is less mill overrun above the woods scale by the Scribner, the cost of handling the small logs increases more rapidly than the decrease in the overhead charges with the increased output of the mill.

In the case under consideration if the logging were paid for by the day and not on the basis of a log scale there would be a further increased profit by not cutting the small trees—or cutting the small trees would result in decreased profits.

The above conclusions are on the basis of a uniform stumpage value for trees of all diameters. As a matter of fact, the stumpage value should increase with the diameter.

When timber is bonded stumpage partakes in the manner in which it increases in cost of the character of an overhead charge. Leaving trees of small diameter therefore requires that their value shall be carried as a charge against those cut.

In conclusion it may be said that the conditions where the cutting of

TABLE 2.—Profits in cutting to different diameters with the woods operations paid by the Doyle (or Doyle-Scribner) scale.

	Cutting all trees above diameter of		
	7 inches breasthigh, 9 inches on stump	11 inches breasthigh, 13 inches on stump	13 inches breasthigh, 15 inches on stump
Woods operation and sawing	$7.95	$7.92	$7.80
Overhead charges and profits	3.00	3.07	3.50
Stumpage	3.50	3.50	3.50
Piece charges	2.09	2.09	2.09
Total cost of production	$16.54	$16.58	$16.89
Selling price of product	$16.54	$16.59	$16.69
Loss in the operation by not cutting the trees below 14 inches	.....	.....	$0.20
Profit in operation by not cutting the trees below 11 inches	.....	$0.01	.....

TABLE 3.—Profits in cutting to different diameters with the woods operations paid by the Scribner (or Decimal C) scale.

	Cutting all trees above diameter of		
	7 inches breasthigh, 9 inches on stump	11 inches breasthigh, 13 inches on stump	13 inches breasthigh, 15 inches on stump
Woods operations and sawing	$7.95	$7.69	$7.35
Overhead charges and profits	3.00	3.07	3.50
Stumpage	3.50	3.50	3.50
Piece charges	2.09	2.09	2.09
Total cost of production	$16.54	$16.35	$16.44
Selling price of product	$16.54	$16.59	$16.69
Increased profits in the operation by not cutting the trees below 14 inches respectively	.....	$0.24	$0.25

small timber may be an important factor in reducing profits are:

(1.) When logging costs are high and overhead charges are relatively low.

(2.) When the proportion of small trees is large.

(3.) When logging is done by day labor or when a log scale is used giving but little mill over-run.

(4.) When most of the smaller trees are in the more inaccessible situations, as is prevailingly the case in the mountains.

And now came one into the convention-cave telling how a flock of food had been sighted, flying low over the Tin Forest.

At once the convention was adjourned while the members got their guns and went out to bag the whole bally flock!

During the Monday afternoon session a vast amount of data on costs was brought out by discussion, all of which will be tabulated and prepared for publication at a later date.

A very interesting point was made by F. W. Stevens of the Bagdad Land & Lumber Company operating at Bagdad, Fla.

Mr. Stevens told how his people left the tops on all trees for some ten days after cutting, after which the tops were amputated and the logs sent to the mill.

It is found that these tops will continue their function of drawing sap out of the tree as long as there is any appreciable amount remaining in the trunk.

Since the felled tree cannot renew its sap contents, this method enables logs to be sent to the mill practically devoid of sap.

As a result there are far fewer sinkers in the log pond, while sap-stain is practically eliminated.

Joseph Friedlaender vouched for the efficiency of this stunt in gum and Albert Pappe (of Muns Pappe & Cie of Mexico) stated that it workt well in Mexican Pine, greatly reducing sinkers and preventing blueing.

The tops might prove cumbersome in 10,000 ft. timber but under that the plan would seem to merit careful consideration.

Just before the convention adjourned for the night, somebody doused the glims and straightway

there was projected against an aluminum screen, situate behind the officers' dias, that now-famous three-reel motion picture entitled

"MODERN LOGGING"
in the
Woods of the Industrial Lumber Co.
at Elizabeth, La.

Showing Clyde Self Propelling Logging Machinery at Work.

The Hon. Sam Lee is the motion picture "star" in this film and, since he was present also in person, he was asked to explain whatever needed explanation.

This he consented to do, but the picture brot out every point so plainly—to the expert eyes of this particular audience—that no explanations were necessary. So Sam escaped.

At the time these pictures were made—during the summer of this present year—Logger Lee was Woods Superintendent for the Industrial company.

He has since been elevated to the double superintendency of woods and mill, whether because of his proficiency as a motion-picture star or because Brother Bridgewater (the former mill supe) moved on to Fullerton to become general manager there, history holds no record.

In any event, Logger-Lumberman Lee—as he must now be alliterated—is fully equal to his double job—which is probably the real reason why he obtained it!

A short film showing a track-lay-

ing stunt followed, after which Presiding Officer Marsan called the convention off for that day.

And behold it was the afterevening of October twenty-sixth!

Now there was advertised for this day and time a pugilistic encounter betwixt one Harang and one Delmont, the same to take place before the Orleans Athletic Club.

Many of the members had heard that boxing was one of the most brutal and degrading forms of indoor sport and, naturally enough, desired to verify this fact for themselves so that they could warn their friends against it if they discovered that such was indeed the case.

Thirty ringside seats having been sequestered by a personal friend of the Kaiser, that same number of loggers might have been observed occupying them a little before the tap of the first gong.

The first four-round prelim. was—but this is a perfectly respectable logging paper and we have no sporting columns.

—See the dailies for details!

Suffice it to say that the main bout convinced the crowd that boxing is less painful than ping-pong.

Even the referee arrived at this same decision shortly after the commencement of the thirteenth round, declaring the match off and over just as the contestants were attempting to fall out of the ring in each others arms and become part of the audience.

The night being still youthful, many of the members adjourned down to the old St. Louis Cemetery, presumptively to study ecclesiastical architecture.

And behold it was the morning of the second day:—

The morning of Tuesday the twenty-seventh began with a paper written by Vice-President C. P. Myer and read in his absence by W. H. Aldrich, superintendent of the inspection department of the Southwestern Surety Insurance Co. of Dennison, Texas.

This paper dealt with the need for driving Safety First principles into the minds of all employees, as also with the desirability of furnishing proper protection for all dangerous moving parts of machinery.

A little card, distributed by Mr. Myer to the employees of his company, was passed among the members. It bore the following message.

"SAFETY FIRST!"

"Get the Safety Habit; its the only habit that will not injure you.

Habit is the strongest thing in the world. Cultivate the habit of being careful.

Teach others to be careful and help to prevent accidents. Accidents mean cripples, widows, orphans, poverty and distress.

Humanity demands that you help to prevent accidents.

To prevent distress is nobler than to relieve it."

After completing his reading of Mr. Myer's paper, Mr. Aldrich went on with his own.

"ACCIDENT PREVENTION"
W. H. Aldrich.

Being a practical safety engineer, as C. P. Myer, vice-president of your association, has told you in his address just read, I will briefly try to explain the duties of the inspecting engineer in relation to accident prevention, as I see them.

First—He must have the natural, practical mechanical ability, and be a first-class engineer, and should also be a good machinist having had a varied experience in mill and factory work, and perhaps no man is better fitted for these duties than the marine or locomotive engineer, because these men must serve several years under competent men be-

fore they can assume the duties of these positions. These men also learn to be alert and always watchful, a qualification very necessary in an inspector. He must be able to judge each condition and machine accurately, to see if any improvements as to safeguarding it can be made, to make the operators' duties more safe.

Second—He must posses as good personal appearance and have a high moral standing. These qualities are needed in presenting to owners, managers, superintendents, etc., the recommendation he finds necessary in order to improve the plant and to bring it up to the highest point of efficiency and to increase the output if possible. This in the past has not always been an easy task, from the fact that many of his suggestions were new and untried and strong opposition was often made by men long in the service who have never been injured and who believe the inspector was interfering with their natural rights to do their work as best suited them.

Sometimes an accident on an unguarded machine or exposed place was necessary to convince them and the writer can recall many of these. But once the guard was in place and the new condition accepted, the owner was pleased and the result has been a general acceptance of the safety engineer's suggestions. That to-day all modern machinery is built with dangerous parts protected and the industrial accidents reduced in many plants 50 per cent, is the result of the inspector's persistent efforts, and I have here a statement of the Eastman Kodak Company which is proof of what I say.

Third—The next great qualification of the inspecting engineer is his moral courage to face the great owning managers and say to these men: Sir, it is your duty to so conduct your plants that accidents can and will not happen to your men. Holding each foreman to strict account for dangerous conditions thruout his department. And before the compensation law came into existence this task was a hard one for insurance inspectors, for state laws were generally lax and state inspections more so, and one argument met very often was "that the state inspector just passed this, that or the other;" and frequently I have said: "My dear sir, if you were to pay for an inspection of your plant, which man would you hire, the man who found things and reported them, or the man who did not?" The answer of course was in favor of the man who did his work well.

After long and persistent effort of the inspector conditions are different and everyone now has safety first ideas.

Owners are studying these problems and the frequency of industrial accidents is becoming noticeably less. Manufacturers are stirred as never before on this subject. The physical and moral hazards are being raised; employees no longer look upon the inspector as a spy, but as their natural helper in getting things done by the firm. This causes men to think and when a man begins to think about his surroundings just that moment he becomes a better and safer man.

A moment taken to make the understanding safe is time well and profitably spent. The prevention of accidents is a work worthy our best effort. The payments of claims on preventable accidents is an excuse; therefore, let each man go away from the meeting fully determined to raise the moral standing of his men and afford them proper protection in making their work safe, thus reducing accidents which always bring to the injured suffering and distress, not only to them but those dependent on them. When

the practice of safety first methods has once taken hold of you just that moment a better condition will take place and accidents become less frequent. No matter what or where your operations are carried on, always practice safety first.

The remainder of the morning was given over to a general discussion of steam skidding operations, which was opened by Mr. H. B. Wainwright of the Lumber Minèral Company operating at Arbo, Miss.

MR. WAINWRIGHT said his company used a two line skidder, going back 900 feet and covering a 50-foot width. He skidded from 46,000 to 85,000 feet a day and used some horses. His logs averaged 171 feet for last four months. Last year they averaged 225 feet. The logs are from 24 to 48 foot lengths. His sawing cost is 33½ cents and skidding cost from 53 to 60 cents. The timber averages 12,000 feet to acre. It takes from 10 to 15 minutes to move from one setting to another, using deck lines. He works 13 men, which includes the horse riders and night watchman. He uses ⅝ rope of Hercules brand. He said they lasted from eight to nine months and pull 9,000,000 feet in nine months, which makes an average of 4,500,000 for each line. The lines are 1,000 feet long. Mr. Wainwright used 17 men in his steel crew as a rule and has no section men, working but foreman and nine men at present, who get three rails up and down to man. He puts 17 to 22 ties under each rail, spiking them all with 9-16x5½ spikes. He uses angle bars. He operates in hilly country. The set is all cut down before skidding. The cost for wood for skidder is $3.00 a day. He uses two horses to line which work 40 minutes without rest. Did not know how long horses lasted in service and had no opinions as to weight best suited. He placed the best weight for riders at 135 pounds. Locomotives burn wood for fuel and are equipped with injectors. He washes boilers every two weeks and uses artesian water. Flues are cleaned once every six months. He said he did not make it a practice to burn out his boilers so could not say how often it happened. He pays the skidder foreman $3.00, the leverman $1.80 and .10 cents an hour to riders. It costs him 53 to 60 cents to skid and from 19 to 24 cents to load. His cost from stump to pond was $3.30.

S. J. HINTON of the Finkbine Lumber Company, Wiggins, Miss., uses a Clyde ground skidder and averages four acres to a setting. He uses a ¾ yellow strand 6x19 skid line and averages 3,000,000 feet to the line. The cable is oiled once a week with common black oil. His cost per 1,000 feet for lines past year was 8.7 cents. His cost for engine fuel was 15 cents. He works eight horses to line 2½ hours without rest. He said anything under 200 pounds suited him for riding weights. He uses wood for fuel and figured it costs two cents paying $1.50 for man attending to it. Timber cuts 10,000 feet to acre. He pays skidder foreman $100 a month, leverman $1.50 a day and drum man $1.50 a day, working 24 men in crew. He goes back 600 feet. His cost from the stump to the pond averages $2.85. He has an extra charge of 80 cents made against his work, which brings the cost up to $3.65. This cost is for general overhead expense. He pays four cents for cutting logs and furnishes filer and oil.

C. B. LINDSAY of the Gulf Lumber Company, Fullerton, La., uses 4-line Clyde skidders, going back 450 feet with a 60-foot width. He uses a ⅝ American wire which pulls 4,000,000 feet to line. He cuts the set before skidding. He pays $2 per day for delivering wood to the skidder. He uses three horses to a line and works them 30 minutes

without rest. He finds the average life of horses to be three years. He likes 1,300 pound horses best and uses darkey riders, paying them $1.50 a day. He pays skidder foreman $100 a month, leverman $2.50 and tong hookers $2.00 using 19 men in crew. His skidding cost was 46 cents and loading cost 16 cents, his total cost from stump to pond being $2.16. He handles 300,000 feet daily and uses McGiffert stiff boom loaders with end hooks.

S. M. LEE of the Industrial Lumber Company, Elizabeth, La., uses Clyde ground skidders with four lines and goes back 450 feet. He uses 5/8" wire of all makes, buying according to the best price when he needs rope. He finds the average life of wire to be five months. He cuts full stand before rehaul skidding and half where he uses horse skidders. He pays skidder foreman $125, leverman $2.75 and $2.50 for horse work. He uses 22 men in crew, four to a line, and figures his cost at 71 cents log scale, which figures on a 38 per cent gain. It cost $2.07 from stump to pond on log scale or $1.50 board measure, which includes everything down to taxes. He reverses his skidding lines every six weeks. He averages from 6,000,000 to 7,000,000 feet to line and uses no dope on cables.

WALTER MARTIN of the American Lumber Company, Merryville, La., said he uses Clyde ground skidders and goes back 500 feet, using four horses to the line and a 5/8 wire of Hercules make. The line lasts from five to six months. It takes from 10 to 15 minutes to make a setting. He does not cut full set, cutting the back first and then skidding, after which he cuts to track. He pays a man $2 to furnish wood for skidder. He uses three horses to a line and gives them a 30 minute rest. He finds the average life of a horse to be from two to three years. He pays skidder foreman $125 a month, $2.50 a day for foreman on horse skidder and $2.75 to leverman He works 22 men in crew and uses stiff boom McGiffert and a combination loader. It costs 50 cents to skid and 11 to 12 cents to load. He does not use oil on wire He had been using 6x19 strand but now uses a 6x8 hard line which averages six month's service.

R. L. WEATHERSBY of Kirby Lumber Company, Silsbee, Tex., uses a combination McGiffert and

cuts 10 acres on stand, working two lines with 5/8" wire. He uses Hercules with 6x19 strand, the line lasting about 4½ months. He cuts half of stand first and then skids. He pays a fuel man $2 a day. He uses three horses to line and gives 30 minutes rest.. A horse lasts two years worked to the collar. He likes a roan the best. Likes a 900 pound horse and 150 pound rider. He pays skidder foreman $100 a month, $2 and $2.50 to leverman and $2.25 to tong hookers on loader and $1.75 on the combination. He works 17 men on the combination and 22 on the others. The total cost of his crew averages $35 a day on combination and from $48 to $52 on the others. The cost of skidding on combination is 20 cents and on the others runs from 50 to 55 cents. He goes back 450 feet both ways. He changes wires about every 60 days. It takes 30 minutes to change stand of combination and 8 to 10 minutes on the others.

W. H. McGREGOR of the Delta Land & Timber Company, Conroe, Tex., uses Clyde rehaul skidders with a 5/8 wire which lasts from four to five months. He cuts the stand before skidding. It costs $5.25 a day to furnish fuel to machines. He pays skidder foreman $135 a month, leverman $2.50 a day, tong men $2 and uses 19 men in crew. It costs 65 cents to skid to rail and 20 cents to load. Uses a McGiffert

quarter swing, going back 660 feet and makes a stand every quarter of a mile. He cuts stumps 18 to 24 inches and cuts the full set before skidding. Timber averages 15-, 000 feet to acre and logs 180 feet.

GEORGE W. BLACKLEDGE of the Gilchrist-Fordney Company, Laurel, Miss., uses a Clyde 4-line with rehaul, going back 900 feet and cut 150 feet wide. He uses ¾" American wire. Skidder lines average 4,500,000 feet and rehaul from 7,000,000 to 8,000,000 feet. He cuts the set before skidding. He pays $4.25 a day fuel cost and skids 85,000 feet. Pays skidder foreman $100 a month, $2.25 to levermen, $1.50 to tong hookers and uses 28 men in crew. The total cost of crew is about $50 a day. He uses McGiffert quarter swing, changes lines every 60 days and coats them with a cheap black oil once a week. He skids from 900 to 1,100 feet. It takes 20 to 40 minutes to move skidder from one set to another. He keeps a tally man who records all operations and shows delays and their causes. Cuts stumps 6 to 10 inches.

ABOUT THE BONUS PLAN

C. M. MUNSON, of the Bagdad Land & Lumber Company, uses a four-line Clyde without a rehaul and a ⅝" Hercules wire. The acreage logged on stand depended on timber. He cuts stand before skidding. Fuel costs $3.50 a day. He works two horses to a line with one hour rest. He finds the average life to be from five to seven years. He likes the weight to run from 900 to 1,100 and uses boys for riders, but none under 14 years. He pays all wages on piece basis, using 500 logs as basis. The skidder foreman gets so much for each log he skids and drum man so much for each log he pulls. He pays the skidder foreman $2.50 a day on 500 logs and for all over that so much a log extra. He cuts an 8-inch stump and pays five cents for each log. The total cost per thousand feet to skid and load runs from 75 to 77 cents and 33 cents for loading alone. He uses 18 men to crew and goes back 750 to 900 feet. He uses an American and a McGiffert loader. He finds piece work more satisfactory as it reduces cost per 1000 feet. On days of no work there is no pay. It increased the capacity of the skidder 400 logs a day. The total cost on log scale is $4 and on mill scale $3.15. He hauls 25 miles over L. & N. main line. In reply to a question Mr. Munson said that the five cents per log was for each log whether one or two to a tree. If two logs, he paid 10 cents. Sawyers pay for own saws and use whatever they prefer. The company furnishes a file and oil with no restrictions on amount of oil used.

V. E. LANDRY, of Lyon Cypress Company, Garyville, La., which concern uses bonus system entirely, gave the following scales paid per 1,000 feet: engineers, 14.35 cents; fireman, 7.17 cents; slack pullers, 7.17 cents; levermen, 9.55 cents; loaders, 8.61; riggers, 11.96 cents; tong pullers, 10.04 cents. These men averaged per hour as follows: slack pullers, 15; levermen, 20; loaders, 20; riggers, 25. No hour basis was given on others. They average 23 cars daily. He pays skidder man 30 cents and back rigger 15 cents per 1000 feet. This is a cypress operation. Logs average 1,400 feet to a car. The mill has a capacity of 300,000 feet night and day, but is working days only now and cutting 140,000 to 150,000 feet.

Secretary Boyd said his attention had been called to the question of sore feet on horses, and asked if any one had stock so troubled. B. P. Head said that was the only trouble he ever had with horses and it was slight. Two horses played out in

the last two years. He found the only remedy a surgical operation. He puts them in the hospital where a veterinary cuts away the hoof in a V-shape, which gives drainage for the pus. They are generally laid up for about two months. Most of the trouble is started from bruises, caused principally by one horse stepping on another.

The convention then adjourned to the divers and varied eat-houses with which New Orleans is liberally supplied, each of the members bearing with him an S. L. A. watch fob providentially provided by the Clyde Iron Works.

And—by-the-way—we have hitherto neglected to mention that this was the first S. L. A. convention at which members and guests have been decorated with badges.

This badge—a Romangold log dependent from an Irishgreen ribbon—gave the conveners quite a festive appearance, in addition to making introductions unnecessary as each man's name was superscribed upon the name plate of his badge.

The badges also were supplied by the Clyde Iron Works and were minted after a design approved by President Baker and Secretary-Treasurer Boyd.

The greater part of Tuesday afternoon was devoted to a discussion in which the letter S was removed from steam logging. Mr. L. R. Wilcoxen of the Crossett Lumber Company took a prominent part in this discussion.

Messrs. S. C. Gammill, B. P. Head and R. L. Weathersby also gave of their experiences in team logging.

Brother Boyd then reminded the convention of C. C. Curry the Homecrofter-Logger and asked if any had tried out the vegetable garden plan described by Crofter Curry at the Third Convention.

Mr. S. J. Hinton of the Finkbine Lumber Company operating at Wiggins, Miss., pleaded guilty to possessing a one-acre plot but could not tell just how much it had saved his company. It supplies all vegetables for white and colored labor and in addition has cleared ten Wilsonians in cold cash.

Later Mr. Hinton asked why some of those present did not cut all the timber at a set before starting to log.

The replies were to the effect that less waste on the ground meant fewer sore legs among skidding animals, while the tall and uncut also furnished shade for the laboring men and teams.

Meanwhile a little private session of cypress men had been going on in a distant corner under the direction of Chairman Marsan.

The Chairman returned to his proper place at this moment, in time to appoint R. Lee Bass, B. P. Head and S. J. Hinton as a Nominating Committee just before taking an adjournment until the morrow.

In a misguided moment, the master of entertainment had selected a certain musical comedy, as the convention rendezvous for the evening of Tuesday the Twentyseventh.

Now the average musical comedy may be known by the facts that it is neither musical nor is it comical, while the "plot" is more in the nature of a treasonable conspiracy against the intelligence of the audience.

This particular crime—"The Midnight Maid" we believe it was called—cleverly avoided this last charge by making no pretense at having any plot whatsoever.

It just started, used up a couple of dictionaries, two costumers' stocks, all the assorted notes in seventeen wind-and-string instruments, and then quit greatly to the relief of the entire audience, but particularly of the loggers.

There needs a special breed of

arrested mentality to enjoy productions of this kind, and none of that particular breed happened to be present.

—Otherwise the show might have proved decidedly enjoyable!

However, few went to bed immediately, so the night was not lost.

The morning of Wednesday the Twentyeighth—final day of the Fourth S. L. A.—started with the reading of a paper prepared by Dr. C. L. Vines of the Crossett Lumber Company operating at Crossett, Ark.

The doctor's paper was brief and to the point—read it yourself and judge!

FIRST AID TREATMENT IN THE WOODS

Dr. C. L. Vines, Crossett Lumber Co., Crossett, Ark.

Fortunately it is not necessary for the first aid student to go far into the subject of medicine and surgery, but to meet emergencies he must have some knowledge of the structure of the human body and the pyogenic or pus-producing germs. First aid to injured in the woods is carried out in the following manner.

The camp physician organizes classes which consist of a foreman of each crew in the woods. For the first lesson they are taught the first aid materials, which consist of stretcher and method of carrying the injured person; bandages, tourniquets, compressors and the method of applying them.

VIC LANGLEY

For the second lesson they are taught the germ theory, especially the germs that enter the body thru wound, causing inflammation and formation of pus.

For the third lesson they are taught the agents that will kill germs or retard their growth, and how these agents are applied.

The fourth lesson covers hemorrhage, the points of blood pressure, and how to control same.

The fifth lesson treats of dislocations and fractures and application of splints.

The sixth lesson relates to first aid treatment of snake bites.

The seventh lesson discusses the differential signs and symptoms between sunstroke, heat prostration, apoplexy and shock and first aid treatment for each.

The eighth lesson studies burns, scalds and wounds and treatment of each.

The ninth lesson relates to stimulants for the injured and the methods of administering them.

The tenth lesson discusses means for preventing accidents.

Every first aid man is provided with a stretcher and a first aid box

HEISLER
Geared Locomotives

Are especially adapted for heavy hauling on steep grades, sharp curves and uneven tracks. For logging, switching and pulling on main lines, mills, furnaces and industrial purposes.

Just off the press, new detailed descriptive catalogue 108.

Heisler Locomotive Works

ERIE, PENN., U. S. A.

containing triangular, finger and toe compress and roller bandage, tincture of oidine, carbolized vaseline, aromatic spirits of ammonia, iodine swabs, drinking cups and safety pins.

The first aid class is taught the different bandages and their use; for instance, the triangular bandage may be applied in two ways, folded and unfolded. Folded, it is used for cravat bandage for palm of hand, eye, jaw and neck; unfolded, it is used as a bandage for the foot, hand, head, jaw, and as an arm sling.

The finger bandage is used for fingers, toes and small wounds of the arm.

The three-finger bandage is used as a compress bandage to control hemorrhage.

We apply pure tincture of iodine with an iodine swab to all wounds where the skin is broken. The iodine must be applied freely and at once to be effective. The bandage is then applied.

There are a few conditions, however, where we do not use iodine; for instance, wounds of the eye, burns and scalds.

The first aid student is taught that treatment given in the first few moments may decide whether the patient is to recover or die, but on the other hand he is warned not to attempt treatment that should only be given by a competent physician.

First aid work consists in learning what to do, as well as what should not be done.

When an accident occurs on the works, the first aid man immediately renders first aid treatment and makes a written report of the case and sends patient to the doctor. The physician makes a record of the case and when the patient is able to resume work the doctor mails a written report to the patient's foreman stating that the patient is ready for duty.

Since January 1, 1914, 106 accidents have occurred in our woods which received first aid treatment; out of the 106 cases only three cases suffered with infection.

The necessity for first aid treatment in the woods is very great. The patient goes to his doctor with his wound free from germs and cleanly dressed; his broken limb with a temporary splint, so that no deformity could occur; his pain relieved, shock almost nil, and in a better way for a speedy recovery in every way.

TREVETTE BABB MCCORMICK

Then followed a brief discussion on this same subject, in the course of which L. R. Wilcoxen demonstrated the method of applying a finger-bandage, using Brother Boyd as his patient.

The discussion then became very general, covering the whole art and craft of logging in rapid-fire repartee until it came time to hear a paper prepared by Dr. Austin camp physician for the Fernwood Lumber Company, which (in the doctor's absence) was ably elocuted by Brother Boyd.

The discussion then turned upon the subject of drinking water and the need for purity in this respect was insisted upon.

A few of those present among the visitors were surprised to hear water discussed under the subject of drinks, since they had always supposed it was intended by Nature solely for the soaking of sore feet.

However, Secretary Boyd then went on to read a paper on "Logging in Southern Brazil" prepared by Mr. G. W. Patterson of the Southern Brazil Lumber & Coloniztion Company.

The operations of this same company were very completely covered in the issues of our magazines for March and April 1913, by referring back to which you may refresh your memory on this interesting operation:—it peeves us to repeat our own dope!

Just before the close of this morning session, Logger Lee Bass introduced the following resolution in tribute to President J. B. Baker:

> Whereas, our president, J. B. Baker, was prevented from attending this meeting on account of the burning of his planing mill, be it
> Resolved that we wish to place on record our tribute to J. B. Baker, to whose practical knowledge of logging, and ability to impart information and enthusiasm among the membership has been of the greatest value to this association since its organization.

The resolution was adopted.

The final afternoon session was given over largely to a discussion of cost sheets and cost-accounting system.

An official form was furnished by Secretary Boyd, the result of careful consideration between himself and President Baker.

We have reproduced this form and a copy is enclosed in this magazine.

The report of the nominating committee was then received and accepted resulting in the election

Official Form of Cost Sheet for Logging Operations.

.....Co. for..... .....19.....

All cost to be based on mill cut, where practical.

Mill Cut.....ft. Pine Mill Cut.....ft. Hardwood.

FOR YELLOW PINE AND HARDWOOD OPERATORS	$	C
Cutting Right of Way and Banking grounds.....		
Grading and Building Bridges.....		
Taking up, laying steel and Repairs to tracks.....		
Cutting logs (average length.....ft.).....		
Hauling or skidding to track, average distance skidded.....ft.		
Cost of feed for all stock used and supplies for skidders.....		
Cost of main line to Pond, actual or contract cost.....		
General Expense.....		
Total Cost, delivered at the Mill.....		
Total cost last month.....		
Number of logs handled during month.....		
Average per log.....		

CYPRESS OPERATORS	$	C
Mill Cut.....ft.....		
Cutting Right of Way and Banking grounds.....		
Grading, laying and maintenance of spurs.....		
Deading Timber.....		
Felling and Cutting Timber (average length.....ft.).....		
Skidding and Loading on Cars (average distance skidded.....).....		
Dynamite and Cost of Blasting.....		
Road Cutting.....		
Trailing and Cutting Undergrowth.....		
Cost of Pulling Timber (average distance pulled.....ft.).....		
Rafting and Towing, or mainline cost ot mill.....		
General Expense.....		
Total Cost delivered at Mill.....		
Total Cost last Month.....		
Number of logs handled during month.....		
Average per log.....		

NOTE:—This sheet may not be just what you are accustomed to using, but it will cover every thing; and every man will have the same thing to report by. All members will please use this until we get a better one

SOUTHERN LOGGING SUPERINTENDENT'S ASSOCIATION
By JAMES BOYD, Secretary.

CULTY OF FORESTRY
DEC 11 1914
IVERSITY OF TORONTO.

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It will give you BETTER circulation. The average credit rating of its subscribers exceeds $100,000 each.

You will get inquiries from firms who will make the most desirable customers, many of whom could not be reached through other media.

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Ask for sample copy and further particulars.

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World's Greatest Lumber Paper

CHICAGO

BUY THIS BOOK!

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It sums up our years of experiment—observation—inference in the line of clearing logged-off-lands.

If you own or are interested in logged-off lands; if you want to move them at a profit; if you want to MAKE THEM PAY:———THEN———

BUY THIS BOOK

—at the cost of a request for it.

Say "Steam Machinery" told you about it—THAT'S ALL!

Clyde Iron Works

DULUTH, MINN.

U. S. A.

of the following officers for the ensuing year:

PRESIDENT: C. P. Myer, assistant general manager Kirby Lumber Company, Houston, Texas.

FIRST VICE-PRESIDENT:Oscar Marsan, Opdenweyer-Alcus Cypress Co., Sorrento, La.

SECOND VICE-PRESIDENT: T. B. McCormick, general manager Carrier Lumber & Mfg. Co., Sardis, Miss.

SECRETARY-TREASURER: James Boyd, Lumber Trade Journal, New Orleans, La.

The following state-vice-presidents were elected:

ALABAMA: C. C. Curry, Vredenburgh Sawmill Co., Vredenburgh, Ala.

ARKANSAS: L. R. Wilcoxen, Crossett Lumber Co., Crossett, Ark.

FLORIDA: C. M. Munson, Bagdad Land & Lumber Co., Bagdad, Fla.

GEORGIA: J. B. Work, Ocmulgee River Lumber Co., Lumber City, Ga.

LOUISIANA: R. Lee Bass, Wyatt Lumber Co., Wyatt, Louisiana.

MISSISSIPPI: V. C. Langley, Wausau Southern Lumber Co., Laurel Miss.

TENNESSEE: E. W. Tschudy, vice-president and general manager Tschudy Lumber Co., Memphis, Tennessee.

TEXAS: W. H. McGregor, Delta Land & Timber Co., Conroe, Texas.

A vote of thanks was tendered to Secretary-Treasurer Boyd for his faithful and efficient service for the organization. Brother Boyd returned thanks with his accustomed eloquence.

Another vote of thanks was then extended to the Clyde Iron Works for supplying the convention badges, and in acknowledging this the same company requested the privilege of supplying badges for the 1915 meeting.

This having been granted, Presiding Officer Marsan clanged his gavel for the last time in 1914 and the business of the Fourth Annual Meeting of the S. L. A. was at an end!

—Notice that we say the "business" was at an end.

Because if you believe the convention is now all over and done with, you have a change of heart coming to you.

Ever since Secty-Treas. Boyd made mention of his two hundred seventy-five dollar balance on hand, Chairman Marsan and some others had been worrying over all that wealth lying idle and growing rusty.

And, soon after the commencement of the final afternoon session, this worry found vent in a merry motion that the S. L. A. should terminate its Fourth meeting with a Bright and Bubbly Banquet for all its members and guests!

This motion was carried nem. con.—as they say in the Congressional Record—and while the work of the convention proceeded Harry Fletcher was deputized to rush around and make the necessary arrangements.

Harry acquitted himself with honor, not to mention eclat, and so at seven that evening some seventy loggers and limpets sat down to a splendid spread in the Cosmopolitan Hotel.

The Chairman, with a wisdom more than common, had ruled against all after-dinner speeches, arguing that it was better for everyone to talk to everyone

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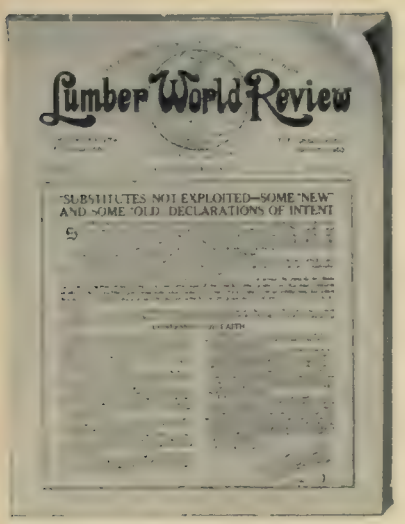
Duluth Photo-Engraving Company

ARTISTS COMMERCIAL PHOTOGRAPHERS — ENGRAVERS ELECTROTYPERS

Duluth, Minnesota

"Experience With A Cable Tram Road"



WOULD you like to know the experience some men have had with a cable tram road?

It is always interesting to know how the "other fellow" does things. Even if we don't always agree with him we get some idea that may mean many dollars to us.

In our December 10, 1913, issue we published a practical discussion of one man's experience with a cable tram road.

The LUMBER WORLD REVIEW publishes practical ideas, plans, etc. in every issue. The methods used by the *other fellow* to make his success are full of ideas for YOU.

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LUMBER WORLD REVIEW

SUITE 1740 TRANSPORTATION BUILDING

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Do YOU know what it is, how to care for it, what it is worth and what to do for it whether you own one tree or thousands of them?

The American Forestry Association, a public-service, non-commercial organization, working for the benefit of tree lovers and tree owners, desires to send you some literature about trees,—you will find it valuable.

Send your name and address and specify whether you have a few shade trees, a woodlot, a well wooded country estate, some timberland, or whether you just love trees.

American Forestry Association

Washington,
D. C.

than for one gink to monopolize the conversation with the customary platitudes.

And so the Fourth S. L. A. Convention ended in the greatest little get-together soiree it has ever been our lot to share.

Everybody was hungry and happy, the food was delicious, the wine in keen condition and in just sufficient quantity.

The Scribe told all his own stories and the best of Kelley's, collecting a fat scrapbookful of brand new ones in return.

At every table the same interchange of healthy humor and helpful experience was going on, until the last shades of night were drawn and the final light extinguished.

—And so, in a blaze of goodfellowship, ended the Fourth Annual S. L. A. of which this is the true Tale!

THE END.

Unconventional Comments and Happenings.

In view of business conditions in New Orleans during the Fourth S. L. A. Convention it was quite appropriate to find Funeral Directors convening all over the lobby. But they regarded the loggers with suspicion amounting almost to actual dislike because they lookt so disgustfully healthy.

The Honorable Sam M. Lee, in his official capacity as Police Juryman for Allen Parish, recently completed a new concrete jail with hot and cold water, fine beds and all modern conveniences including manganese steel bars.

Since listening to the discussion of the new Louisiana log-scaling law he expects to be the first inmate of his own jail, unless he can persuade his company to quit using the Calcasieu log scale.

During the discussion on felling and measuring timber, both Lindsay and Stevens confesst that they never "straighten" their logs. Perhaps they are unaware that "Red Strand" Cole has perfected and is about to manufacture and market a log-straightener which possesses an additional contrivance for pulling all knot holes it comes across in its work. Loggers should investigate this machine as it may enable them to save some money for their companies. The knot-hole puller is peculiarly apt, since everyone will readily believe that knot holes are not holes when extracted.

This same "Red Strand" Cole came and preferred a charge against Merwin Armstrong on the morning of the last day. He alleged that said Merwin had called him out of bed at one thirty that morning to ask him to breakfast at seven A. X.; and he objected, firstly to having his slumbers disturbed and secondly to being expected to get up at six thirty on the Morning After. The accusation fell to the ground because it was impossible to find anyone who could bring himself to believe that Cole was in bed at one thirty!

Brother Blackledge was the first patient of our Official Physician, Dr. Kirby. The doctor addresst himself to Blackledge for the greater part of one even-

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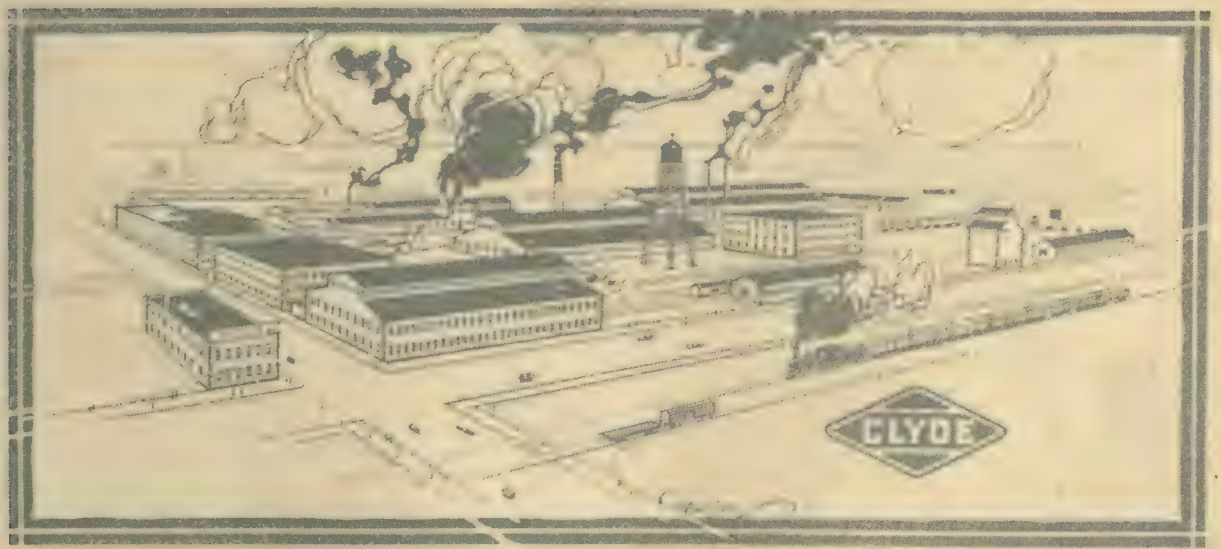

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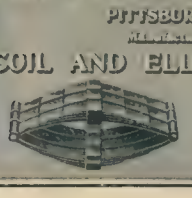

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ST. PAUL, MINN.

ing and the patient admitted being deeply moved by his remarks.

Vic Langley was full—so they told the Scribe—of the new hotel they are about to open at Laurel, the Loggers' Valhalla. Said hostelry is dated to undo its doors about December second and the occasion is to be markt with a Grown-in-Mississippi Dinner. —Let us hope that there will be no real Groan in Mississippi after that dinner is eaten!

Vic's flocks and herds are rapidly increasing, by-the-way, and he proposes to make good on his last year's pledge to be Cattle King of the South in three years. He has two more years to go and the Angora Bull is still in fine fettle.

Harry Schrass is in entire accord with Kaiser undt Gott and believes that Victory would prove her own incapacity were she to perch elsewhere than on the double-eagle banners. Down at Kolb's Cafe one evening the orchestra was wrestling with an exceedingly sorrowful composition which stirred the Scribe's Scottish soul to its depths.

Foolishly, he asked "Germany" if he knew the name of the piece.

"Ja!" came the prompt reply, "Dot's der Britishers' Funerral Marrsch!"

During the Big Banquet, Merwin Armstrong discovered a new Drink which he recommends highly to those suffering from chills.

It is made of equal parts of Chile sauce and port wine with a dash of paprika, the whole seasoned with red pepper and horseradish to taste. Patent rights belong to C. C. Kelley who made his provisional application on Merwin.

"LOGOGRAMS"

from Woods and Mills

P. J. Spafford of Reeves, La., is now Secretary-Treasurer of the White Pine Lumber Supply Co. of Spokane.

These Louisiana loggers seem to have the system for glomming onto big jobs—take Sam Lee as another example!

General Manager Rosenberry of the Rose Lake Lumber Co. operating at Rose Lake, Idaho, now has a son and heir to follow in his feetmarks.

—But the Old Man has an awful start on the youngster!

However, we wish him all the luck in the world, which is the most and best we can do.

Also we congratulate Mr. and Mrs. Rosenberry and Rose Lake, Idaho.

James Long has become Woods Superintendent for the Craig Mountain Lumber Company at Winchester, Idaho.

We hope he will keep a diary and send us some of his experiences to pass out to his brother Supes.

Such co-operation means much in this young science of Logging Engineering.